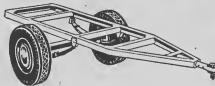
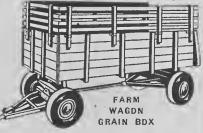
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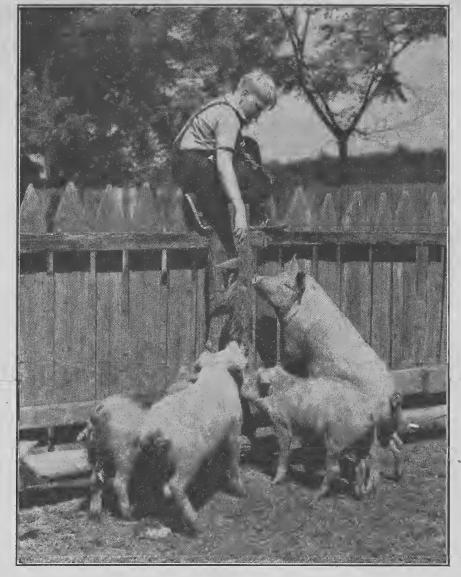
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THE Country GUIDE

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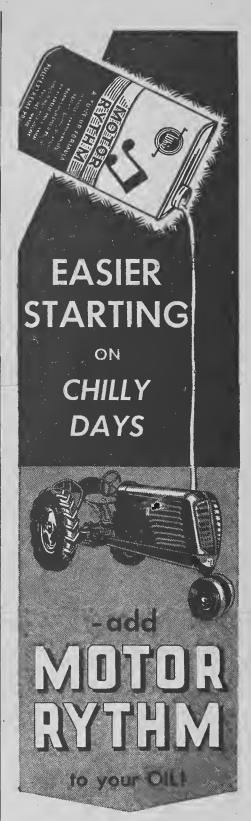
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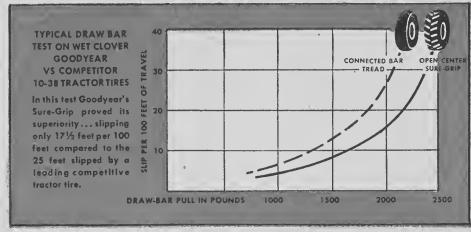
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ARCTIC LIVESTOCK

A herd of 2,370 reindeer imported in 1929 has now trebled in size and is an important source of meat in the Mackenzie Delta

By HARRY J. HARGRAVE

NE of the most interesting Canadian livestock developments in the past 20 years has been the establishment of reindeer in the far North. The reindeer industry, which is Canada's newest livestock development, has been established under the supervision of the Dominion Department of Mines and Resources for the

benefit and welfare of the native and white populations in the Western Arctic region adjacent to the Mackenzie River Delta. Experience to date has indicated that this part of Canada's Northland is well suited for reindeer and that there is a good demand for the products of the industry which include both meat and hides.

More than half a century ago, well before the introduction of modern firearms, the caribou periodically migrated close to the Mackenzie Delta region thus providing the native population with an adequate supply of meat and hides which could usually be relied upon. Modern hunting weapons resulted in a change of migration routes for the caribou, and they were no longer available to the residents of the Delta area. This was a serious matter to these residents who form one of the largest groups of natives

> in the Canadian Arctic regions.

Caribou are still relatively abundant in the Eastern Arctic regions and their migrations, which extend as far south as Northern Manitoba, provide food and skins for the thinly scattered human population in this vast area.

Left: The author where tree zone and tundra meet.

Below: An Eskimo herdsman bulldog-ging a yearling rein-deer.

Right: "Working" the reindeer in the corrals with a moving burlap "fence."

Reindeer in corrals at the annual roundup, Kidluit Bay, Rich-ard's Island.

A tuft of reindeer moss growing with frost six inches from the surface in mid-July.

> Caribou are very similar to reindeer; in fact they will interbreed without difficulty. The most noticeable difference in the two animals is the fact that the caribou is somewhat longer in the leg and more of a rangy type than the reindeer. In some herds of reindeer in Alaska and Siberia, caribou bulls have been used to infuse new blood in the reindeer herds.

> Following the decision to introduce reindeer to the Canadian Arctic, a thorough survey of the available range was made in the late 1920's. Some 6,600 square miles lying north and east of Aklavik along the Arctic coast were considered suitable reindeer range and arrangements were made with a commercial reindeer company in Alaska to deliver a herd of reindeer. This herd numbering 3,500 head to start with, commenced the trail from Alaska in 1929 and were delivered to the Canadian Reindeer

Station in March, 1935, after following the Arctic coastline for the entire route. Some 2,370 head were turned over to the Canadian Station, and it was estimated that most of these were the progeny of the original animals that started the long trek in 1929. Stops were made each spring and summer along the trail while the fawns were born and grew sufficiently to travel. This initial herd has now increased to a total of nearly 7,000 head in spite of consistent annual slaughterings for meat and hides.

THE reindeer is roughly the same size as the native black-tail deer. Mature animals average 300 pounds at three to four years of age, and dress out at an average of 150 pounds when in good flesh. The color is a dark brown or mouse color in 90 per cent of the animals while the balance are a mixture of whites, roans, pintos and greys. The reindeer does not have the graceful jumping gait of the native deer. They appear somewhat awkward when loping, but they have a smooth, single-footing trot which is used more than any other gait.

The horns or antlers of the reindeer are an interesting feature of the animal. Again, unlike the native

> deer, both male and female reindeer , grow horns. In mature males the horns have a spread of over three

males a broad, heavy branch of each horn extends down in front of the face-no doubt to give protection in fighting and to assist in foraging. There are as many as 20 points on the horns, and they become very sharp when the reindeer are in fighting trim. The males shed their horns soon after the rutting season, usually late October or early November. Growth of the new horn commences a short time later and the full size is attained by the following June. At this time of the year the horns are in the velvet and comparatively tender. By August the velvet is shed and the horns are hard and in shape for fighting.

The females retain their horns throughout the winter months and shed them in the spring soon after the fawns are born. They again grow to full size by mid-July. The reindeer's ability to gauge the width of an opening is amazing. If a gate or a space between two trees is half an inch too narrow to permit the horn spread to pass through, the reindeer will not even attempt it. However, if the opening is half an inch wider than necessary, the reindeer will go through at high speed without slackening its pace.

Horns that have been shed are commonly seen on the range where the animals have been pasturing. Almost without exception the tip of each horn prong has been chewed off. This horn- (Turn to page 61)











WANTED: A NATIONAL SUGAR POLICY

million tons, raw value. Last January, when American beet farmers were making plans for their 1947 plantings their government came forward with a guarantee of \$14.50 per ton. This policy has been so effective that it will apply for the next five years. Canadian growers feel that the immediate future of their business depends upon a comparable guaranteed floor price. The Canadian bonus on sugar beets ceases in 1948 and no one can say what 1948

beets will fetch in this country.

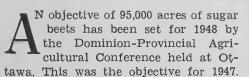
HOW many sugar factories can Canada sustain? The present-day picture is something like this. Two Alberta factories are producing and a third is in course of construction at Taber which plans to start slicing in the fall of 1949. Manitoba has one factory which has not yet operated at full capacity. In

Ontario there is one factory that operated every year before the war but has been idle for the last six years, and another factory operating below full capacity. Quebec has one With a high saturation of sunlight his beets yield 17 to 18 per cent sugar as against a Manitoba average of 15.5 per cent. Lastly the highly developed livestock industry in southern Alberta-permits of an advantageous disposal of the by-products of sugar production.

As against this it must be conceded that proximity of markets gives the eastern grower a decided advantage, and last year Ontario beets actually produced 301 pounds of sugar per ton of beets sliced, whereas Alberta beets had a yield of 247 pounds per ton. In 1947 Manitoba's beets yielded 260 pounds per ton and Quebec's 245. Admittedly these figures change from season to season.

Alberta's natural advantage seems to be demonstrated by the fact that the current decline in Canadian production is due to a decline of acreage in Ontario. Alberta has now supplanted that province as the chief source of sugar, having produced 53 per cent of the total tonnage of beets as against Ontario's 32 per cent, Manitoba coming third with over 12 per cent. The decline in Ontario production is due to the profitability of competing crops. Large sections of that province best suited to beet production find canning crops and tobacco more profitable. A national sugar policy such as that put forward by Baker and his associates might alter the relative scale of profitableness.

Much of the help which the beet growers will need in the shape of a guaranteed floor price de-



However, there is no assurance that this target will be reached. The government proposes but the farmers dispose. And their disposition toward the whole beet sugar situation in Canada is not so good.

The estimate of sugar from the 1947 Canadian beet crop is 165,000,000 pounds, 48,500,000 pounds less than the peak year of 1940, and 41,000,000 pounds less than 1946. The industry considers this position as unsatisfactory, and beet growers place the blame on the Dominion government's lack of a long range domestic sugar policy.

If the administrators at Ottawa are vague as to the shape such a policy should take, Philip Baker of Lethbridge, president of the Alberta Beet Growers' Association can sketch in the main lines for them. "Fighting Phil," as he is called, because of his long uphill fight on behalf of his fellow producers, wants the Canadian government to adopt a similar aim to that followed by every government in Great Britain since 1926. He wants government support and encouragement to expand the industry to the point where half the sugar consumed in Canada will come from Canadian farms, instead of the mere 20 per cent which home production now provides.

The value of a domestic sugar industry in war time has been well demonstrated in our own time. In the first Great War beet production in Britain was almost unknown, and the maintenance of a national sugar supply in the face of U-boat activities was one of the gravest war-time food problems. Between the wars the British Sugar Corporation, a crown company, was set up to establish and operate beet sugar factories, with the result that the supply of sugar was never critical during the second war, and Britain was able to devote badly needed sea tonnage to other commodities.

Canada's experience has not been so sharp, but when the recent war broke out this country awoke to the fact that it had no adequate domestic sugar industry to take the place of threatened imports. Beet growers got a break as long as the emergency lasted. Now that it is coming to an end they are dubious about the future unless the government acknowledges that beet growing in Canada is still an infant industry, not yet out of the woods, and embodies in a long-term policy the measures necessary to insure its steady growth.

Canadian beet growers look across the border and note enviously the way in which sugar production has grown under government stimulus. Last year's American beet crop reached the all-time high of two



Above: Violet Cruickshank of Lethbridge applies the recognized test to the finished product. In spite of the degree of mechanization already reached (lower picture) there is still a great deal of hand work in beet growing.

factory with a very limited output.

If Mr. Baker's target of 50 per cent domestic consumption was endorsed at Ottawa what would it mean in plant extension? Here is Baker's estimate. "We could keep all the factories we now have busy, and as many more. In Alberta we look ahead to two more factories. In war time we shipped Alberta sugar to eastern Canada. Why not in peace time? I know this will require a new deal on freight rates. At the present time we can go no farther than Winnipeg. But freight rates is another point in the National Sugar Policy which we growers advocate." Incidentally, the 30 per cent increase in freight rates asked for by the railways would cost the sugar beet growers of Alberta alone, it is estimated, \$550,000; \$225,000 on marketable sugar; \$85,000 on beets and factory supplies; \$240,000 on increased farm costs.

THERE is some ground for feeling that sugar beet production is tied to irrigation, and that further increases in production will take place largely in Alberta, and in Saskatchewan, when the irrigation plans of that province come to fruition. The irrigated farmer enjoys several natural advantages in beet growing. With a controlled moisture supply he is guaranteed a yield which averages 13 tons per acre.

By C. FRANK STEELE

pends on the future of mechanization in the beet fields. Beets are a crop which have always required a considerable amount of hard labor. A great deal of attention has been given, particularly in the United States, to the development of beet cultivators and harvesters. Some good advances have been registered. There were 80 mechanical harvesting units at work in Alberta, not counting mechanical loaders, not all of them satisfactory. However, T. George Wood, manager of the Alberta factories, and others qualified to speak, are hopeful of the future in respect to reduction of costs through mechanization.

SOMETHING of what is in the minds of the beet growers was disclosed at the recent annual banquet of the beet growers' association at Coaldale, Alberta. They were proud of what has been accomplished after a terrific struggle against odds. They were determined not to give up the fight for expansion of the industry, and they talked rosily of the day when beet sugar would supply all of Canada's needs with a surplus for export.

But if they were optimistic about the future they were not content with Canada's present sugar administration. They endorsed the discontinuance of rationing, for they were anxious to have their fellow Canadians, probably the most sweet-toothed people in the world, return to their normal rate of consumption. Apart from that they (Turn to page 65)

OOD wells are about as scarce as the proverbial hen's teeth in that long, narrow strip of country extending westward from McLennan to Rolla, between the Birch and Saddle Hills and the Peace River. North of the river, water supply presents a major problem in most of the country between Whitelaw and the British Columbia boundary. The Battle River prairies, 60 miles north of Grimshaw, depend largely on dugout supplies, so that water scarcity may again be a limiting factor as settlement moves north along the new Yellowknife highway.

Before condemning the wisdom of settling such areas, the newcomer should look first at the steady farming development in the communities concerned. He must realize that, despite the handicap of limited and doubtful water supplies, many fine farmsteads dot the "dugout" country, which has enjoyed reasonable prosperity. Obviously livestock production will always have its limitations. But one must not overlook the fact that the hog shipments from the Spirit River-McLennan subdivision (1939-1942) give plenty of proof that, despite water shortage, the farmers of that area were certainly producing their share of bacon for Britain.

However, the series of dry seasons which actually started in 1939 and continued till 1946, brought a crisis to many farmers in the matter of water supply. The old dugout, some hastily scooped from small slough bottoms handy to the buildings, others excavated with tremendous labor and almost primitive equipment, had outlived their usefulness. In

By W. S. SCARTH

Prairie Farm Rehabilitation Act provide assistance to the Peace River region. To this day, northern farmers fail to see any justifiable reason why general revenue contributed by the taxpayers of the entire West should not be used equitably in helping them to solve their water problem. Inclusion of the north country in the "drought" area would not detract from its value for potential settlement if there were frank discussions of handicaps and a practical, common-sense approach to the suggested solutions.

FINALLY, in the spring of 1945, the provincial department of agriculture co-operating with the water resources branch, provided a vote of \$60,000 for "dugout" assistance, to be paid in subsidies under the terms of the Peace River Farm Water Supply Policy. Under its provisions a bonus of five cents per yard would be paid to farmers for properly constructed dugouts, the maximum payment to any farm not to exceed \$100. Excavation costs in the Peace were high, mainly because equipment, repairs, and wages were at wartime levels, and also due to the fact that excavating dugouts in the rockhard subsoil was a tough proposition, even for heavy equipment.

To qualify for bonus payment, dugouts had to be

ply. It is encouraging to note that many who took advantage of the cash subsidy are already making plans to safeguard their investment by adopting some of these recommendations. If the majority do, every community concerned should join in a general thanksgiving celebration to commemorate the passing of that dangerous and unsightly mudhole, generally known as the "dam," which disgraced many farmyards and pastures.

It would be a mistake to jump to the conclusion that there were no dugouts of proper design or construction in the area prior to the introduction of the assistance policy. A number of pioneer farmers were well aware of the problem facing them. Many had earlier experience in the "waterless" regions in parts of Manitoba and Saskatchewan. As soon as funds and equipment became available they undertook the excavation of good reservoirs.

Lorne Leriger, farming close to the village of Wanham, put in an excellent dugout in 1942, with plenty of reserve capacity, and installed a filter and well beside it. His water supply has given satisfaction, and there are many others who realized that the job needed to be planned and engineered with the object of making it reasonably permanent. To these farmers and the northern district agriculturists must go much of the credit for the assembling

of essential information on which the provincial policy was based. The men who saw the actual problem on the farm were able to make invaluable suggestions as to how it could best be attacked.

Euclide Hebert, district agriculturist in the territory from McLennan to the Big Smoky, initiated community interest and did much good spade work in the organization of farmers in his district to assist in financing power excavating equipment. This first outfit, purchased when war priorities had almost every unit of big machinery tied to vital airfield and munition factory jobs, was to operate in the community solely for dugout excavation.

AS soon as the assistance policy went into force other contractors had some equipment available. The summer of 1945 was a favorable one for excavation. Many outfits installed lights and worked 24hour shifts to take advantage of every hour of good weather. The "Carry All" type of equipment predominated, as no cat skinner wants to be caught with a dugout half finished when one of those three-day rains hits the Peace. No doubt many farmers in other parts prayed for moisture, but the "dugout" country figured it had better wait till fall, and they would have a crop next year with a water supply to boot. It seems to have worked out very much that way.

Orlon Bratvold, district agriculturist for north of the Peace, and keenly interested in good livestock production, soon realized that government sire policies and good supplies of forage could go only so far—farmers must have a water supply before they could consider any extension of their

Turn to page 50



The fertile Peace River district's great drawback is the scarcity of good farm wells



fop: A D8 with a 12-yard scraper scooping out a Peace River dugout. Centre: A dugout on the farm of George Keleman, Notikewin, Alta., with a capacity of 500,000 gallons, protected by fence and plantation. Bottom: An Alberta dugout being ruined for lack of protection against stock.

many cases trampling of stock with subsequent erosion and silt deposition had reduced their storage capacity to a few barrels of stagnant, soupy liquid which could hardly be called water. By 1944 dugouts which were not totally dry had such a small supply that drastic reduction of livestock was the only answer.

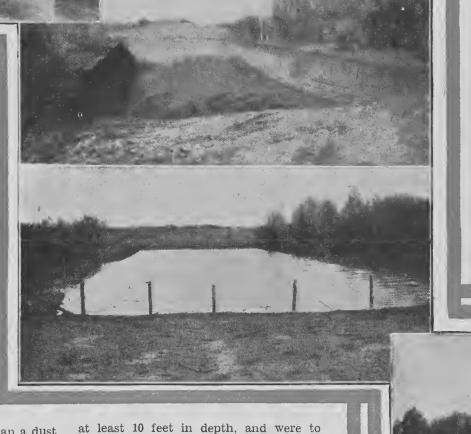
THE wise farmer knew that permanent agriculture always needs livestock somewhere in the picture. Straight grain farming was bringing weed infestation, depletion of fertility, and erosion. Already clouds of drifting soil and the less spectacular but more serious gullying of over-

tilled fields heralded an era which could mean a dust bowl in the Peace River country. The consistent endeavors of the Beaverlodge Experimental Farm staff and the provincial district agriculturists to encourage a forage crop program on every farm received great impetus with the urgent demand for grass and clover seed. But there is always the question as to how long this demand would continue. Sooner or later then, there must be livestock, and the water supply would remain the limiting factor.

Prior to 1944, many had foreseen the difficulties which would inevitably arise with continuing water shortage, and representations were made by municipal councils, farm organizations, and boards of trade to have the water conservation program of the

at least 10 feet in depth, and were to conform as closely as practicable to the design and specifications laid down in the policy. Later provisions were made to ensure a reservoir capacity of at least 1,500 cubic yards, with adequate fencing to provide protection from contamination and damage by livestock. Farmers were also urged to seed down the waste piles and surrounding area in order to reduce erosion to a minimum.

Plans were provided for the establishment of hedges and shelterbelts to hold snow, reduce evaporation, and add to the general permanency of the water sup-



nevertheless true that we're apt to treat an animal with more consideration if that animal cost us a lot of money. Of course, dogs that come to us

"for free" are often wonderful animals and soon gain our respect and affection. But the general fact that dogs cost more today than ever before is

an indication that dogs have

acquired a more important social status, which is all to the

Working dogs, of course,

have always commanded fancy

prices. A fully trained sheep

dog is often worth more than

an extra hired man, at the

specialized job of herding

sheep. I well remember seeing

a wonderfully trained sheep

dog in action: Lady knew her

work down to the last detail.

"High" and "Low" were com-

FARM **POOCHES**

ARM journals are continually featuring articles about dairy cattle, beef stock, fine draft horses, swine, sheep, and poultry, but there is one exceedingly common farm animal that is seldom accorded the distinction of publicity. And that animal is Bowser, Sport, or Lassie, the ever-faithful farm dog that has become a permanent fixture on our hearths and in our hearts.

Of course, changing times have brought about some changes in our opinions about dogs. During pioneer days, the farm dog was selected for its watch-dog qualities. We wanted a sturdy home-guardian who'd keep the "varmints" at bay and chase off

tough characters on those days when the man of the family was away from the house. Bowser was frequently a sizable animal, given to noisy barking and fond of displaying his molars for the benefit of insurance agents and others.

But the watch-dog era has passed. Now we select our dogs for different qualities. We want pets and working dogs today - and we also want dawgs. Just look into the brown eyes of a tail - wagging pooch and you'll understand why dawgs have always been popular.

The 57 varieties "Heinz Dog" appears to be the common breed found on Canadian farms today. Of course, the collie strain is always - dominant. Some farmers have gone in for registered breeds of late, choosing dogs like the in-

telligent Labrador Retriever, the friendly Cocker and Springer spaniels, the easily trained German shepherd or Police dog and other well known types. But the Scotch collie with its derivatives remains the all-time favorite of farm folk, this noble breed noted for its dependability as a home guardian and protector of children, always e v e n - tempered and sagacious among stock, and one of the most affectionate and lovable members of a devoted

family. Some collies become marvellous cattle dogs, seeming to possess an instinctive knowl-

edge about cattle and their ways. It's fascinating to watch a good dog drive in a herd of dairy stock. A brief bark is all that is needed, most times, and the herd comes steadily homeward at a sedate pace and is skilfully guided into the enclosure indicated by the master, or else chivvied right into the barn and stalls.

You'll often meet a farmer who has a gallant tale to tell about a cattle dog: "I was crossing my pasture one spring morning, when suddenly the Jersey bull took a mean spell. There I was, a couple hundred yards from the nearest fence or tree and not even a length of stick handy. I kept on walking, trying to pretend that I wasn't scared, but suddenly that bull quit fooling and charged me at full speed. I started running, and I started yelling, too. But I didn't have a chance—I knew that for sure!

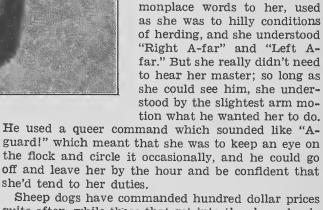
"Then, just when the bull was no more'n six feet behind



me and gaining fast, in flashed Sport, my collie, and he stopped that Jersey then and there. I kept running until I got behind the fence, then turned and saw that the bull was bleeding from a torn nose—that's how Sport had stopped him. The bull was whirling this way and that, trying to spear the dog. Sport wasn't biting the bull any more, just dodging out of harm's way and watching it, but as soon as I whistled he knew everything was okay and came galloping towards me. And boy-did I hug him!"

many of them do a heap of useful work Many a collie has saved a child from harm, too, when a little tot wandered into a field where a vicious bull or steer or mean cow was quartered. The collie breed has well earned the popularity and respect it holds among farm folk today.

> DOG'S true love is the only A life-long devotion that money can buy. And it's a good sign that our dogs are costing us more money nowadays, and that we're willing to pay handsomely to get a good dog. It's a rather sad commentary on human nature, but



good.

quite often, while those that get into the sheep-herding trials held in Scotland and Ireland would command hundreds of dollars-if their owners would consider selling them!

Hounds are high priced, too, but for another reason. In sheep country a good hound will save many a dollar for the farmer by running down a renegade coyote that's become a sheep-killer. The writer would like to stress that all coyotes are NOT sheep-killers, as most of the wild dogs earn their livings honestly by preying on their natural foods of mice and gophers and thus are beneficial to farmers. But when a coyote gets fond of mutton, that animal will return to the sheep flocks time after time to run amok. And that's when a trained coyote-hound is worth having.

Billy Gauld, of Brooksley, has kept a pack of hounds for over 20 years. Every now and then this sheep farmer sights a coyote skulking close to his flocks, and immediately climbs aboard an agile saddle horse and whistles up his hounds to give chase. Away they go, pell-mell across the rolling hills and fields until they catch their quarry.

His blue eyes twinkle merrily when he tells about the time Monty, one of his hounds, pinned down a big coyote and Billy jumped off his horse and grabbed the coyote's back legs to swing it high, intending to dash it forcibly to the ground to dispatch it. But as he swung the animal over his back, the coyote squirmed and managed to sink its fangs in the flank of Billy's leg. There he was, unable to swing it down and kill it, reluctant to let go for fear the coyote would get away! Then the coyote's teeth bit deeper and Bill uttered a yelp and released his hold, whereupon the coyote dashed away with Monty in hot pur-

suit. Billy got himself a club before he approached that particular coyote a second time.

Farm dogs are subject to some special tribulations. In the old days of teams and wagons, farm dogs used to come to town on a Saturday and be forced to

fight every town dog that resented the intrusion of its country cousin. All too often the exhausted visiting dog was driven away from its master's wagon, sometimes becoming a stray dog in the town from then on-and very unhappy about that homeless status, too. Nowadays, with the common use of cars and trucks, the family dog is usually left at home on town shopping days and thus fares much better than in the past.

Perhaps country dogs do not suffer as many ailments as their

(Turn to page 48) By KERRY WOOD





They seldom share in the headlines but

Retrievers are popular in districts where waterfowl are plentiful.

The Collie strain is still the dominant one on western farms.

ALFALFA



Alfalfa-brome mixture at Melita. Soil on this field drifted very badly in 1935 with serious damage to fertility.

LFALFA is a very important crop on irrigated farms in western Canada. Under dry farming conditions, however, its value is not yet fully established. On the close textured clay soils of the dry belt its growth in most years is quite dwarfed. Nevertheless there are some areas dotted here and there over the prairies where soil and moisture conditions enable the grower to produce fair to excellent stands of alfalfa. If these districts could be induced to expand their acreage there would be feed centres built up that would be some insurance against famine

In Manitoba, for instance, there is one area of around one-quarter million acres of land in the heart of what was termed "Drought Area A" in the "Thirties," where demonstration fields of alfalfa are proving that the famine of those years need not be repeated if farmers now operating there will make use of alfalfa to build up reserves of feed. There are other parts of the province such as the land west of Lake Manitoba from Ochre River south to McGregor where there is a plentiful supply of water from four to 14 feet below the soil surface, close enough for alfalfa roots to penetrate to moist soil so necessary for vigorous growth of this crop. Alfalfa has been grown in most of the valley land; in fact the number of districts in Manitoba where alfalfa can be grown is amazing. On the other hand the number of growers, considering the yield and value of the crop, is remarkably small.

The Dominion Experimental Farm at Brandon has made a valuable contribution to agriculture by determining the location of many of the districts where alfalfa thrives. It has been found that alfalfa is a success on almost every one of their Illustration and substations. In southwestern Manitoba in the districts where soil drifting is still a problem good crops

of alfalfa are now produced each year.

On the Melita Reclamation Station there are from 200 to 300 acres of alfalfa grown alone and in combination with the grasses on land that had been abandoned to weeds and drifting. On the Pipestone District Experimental Substation formerly drifting fields have been tied down with hay mixtures including alfalfa. The subsoil is a coarse gravel; the top soil is thin and sandy. Even on this inferior soil alfalfa alone and mixed grass have produced fair to

Thirty farmers well distributed over this large area in southwestern Manitoba are co-operating with the experimental farm to prove that alfalfa yields well on these sandy soils with wet subsoil and that it has a high value as a feed for livestock. These men are quite enthusiastic about the yield of hay and the value of the feed for cows, calves, pigs, and poultry. The average yield of hay in 1947 was over two tons per acre. Half of these fields were sown in 1943 and the remainder in 1945. Experiments in feeding alfalfa

hay conducted on the Reclamation Station prove that cattle on a light ration of grain make good use of alfalfa hay. This indicates that alfalfa would provide a high protein roughage for cattle being "roughed" through the winter.

THERE is a genuine need for establishing reserves to replace the straw stacks that used to be saved over for emergencies. These old stacks were the salvation of many herds. Now the com-

Alfalfa may not be a paying crop all over the dry area, but there are well defined areas where it is proving itself invaluable in soil reclamation and feed insurance

bine spreads the straw back on the land so that other reserves must be built up where feed shortages have occurred in the past. Unless this is done the next general crop failure will result in the sale of

breeding stock on a glutted market, stock that it will be expensive and difficult to replace when more feed is available.

By M. J. TINLINE

Where conditions for alfalfa are favorable it will produce more feed per acre than any other crop except corn in the limited number of districts where corn is one of the major crops. This higher yield from alfalfa can be used to good advantage in building up feed reserves. The preservation of feed is also an important factor. Every year there is a tremendous loss of hay from the many small, poorly built stacks. If this loss could be avoided it would go a long way in providing reserves that some year will be badly needed. Where hay is stacked outdoors, large, well built, well topped stacks are essential in reducing wastage of feed. Sweeps and stackers are becoming quite common in many districts but even with these there is the tendency to speed the work by sweeping the hay the shortest distance possible even though only small stacks are built.

Pick-up hay balers are now found in quite a number of districts. These pick up the dry hay from the windrows and pack and tie, some of them with string, into compact bales that require much less space than a corresponding amount of loose hav. Stacks of baled hay well protected from moisture and livestock will keep for years.

Alfalfa or mixtures of alfalfa and grass will store in less space as ensilage than in any other form. The walls of silos where alfalfa or sweet clover is stored should be nearly airtight, as crops with a high nitrogen content are likely to have considerable spoilage if too much air is present. Careful attention should be given to other details in ensiling. The crop should be a few day's past the stage it is usually cut for hay and ensiled while still green and moist. The cutting box should be set to cut into short lengths. The cut material must be spread evenly and well packed. At the Brandon Experimental Farm the addition of 40 pounds of barley chop for each ton of green First cutting in the stack at Pipestone (top corner). Second growth left for winter protection. Subsoil water table seven feet below surface in coarse gravel.

This field on drift sand at Melita (right) produced two cut-tings a year for three years. The girls are standing in third growth growth.

Below: Alternate rows of wheat and alfalfa sown in the method described by Mr. Tinline. The wheat yielded 23 bushels per acre.

Bottom: An alfalfa silo made from snow fence lined with moisture-proof paper. This type of silo, while satisfactory for corn, did not prove sufficiently tight for an alfalfa-brome mixture. mixture.

> material improves the keeping qualities of the silage and adds to the feed value.

N districts where alfalfa yields reasonably well it produces more hay than the heaviest yielding grass, and it will with proper precautions continue productive for years. Combinations of alfalfa and grass yield less than the alfalfa alone but the mixture cures more readily as hay and when used as pasture is less likely than the straight alfalfa to cause bloating. On the Brandon farm over a long period of years cases of animals bloating on alfalfa have been extremely rare. This is probably due to the practice of putting only well filled animals

on fresh, green alfalfa and never when the crop is wet from dew or rain.

A new plan for seeding a combination of alfalfa and brome grass into loose, sandy soils that drift readily has been developed at the Melita Reclamation Station. The alfalfa and grass seed are sown in alternate rows, sowing with the grain drill equipped with a grass seeder attachment. The alfalfa seed is sown by the attachment into the back row of furrow openers and the pressure springs are released for shallow seeding. Grain is mixed with the brome seed to carry it through the feed cups on the grain drill box and into the front row of furrow openers. Alternate feed cups in both drill boxes are blocked to prevent their Turn to page 32





Great-Uncle got up close to read it, his heavy bulk leaving little room for Gus.

too. Had holes in it. I recollect lookin' at it."

Great-Uncle began to show more interest. "W'ere 'bout's was this, Gus?"

"Think I be tellin' you? I don't know es I want t' be sharin' that reward. You don't half believe me, anyway."

"'Tain't likely a man like that 'd let hisself be scared by a little runt like you, Gus," said Great-Uncle. "He jest be a shootin' first and askin' questions after."

Gus looked at the poster a little uncertainly. Great-Uncle nodded. "It says arrest there, Gus.

That means you gotta take him yourself."

Gus reached up and pushed away his hat, looking

thoughtful—a process which somehow deepened the droll sadness of his naturally lugubrious face.

Great-Uncle said, "Come on. We best be gettin' back t' the house or my ol' woman 'll be sendin' Tom t' look for us."

Gus came along without a word, his face working. Great-Uncle was grinning expansively. Cutting into the fields, he began to hum to himself. Back in the west the sun was sliding below the belt of trees, and the afterglow's redness began to shape into the sky. From the deep woods rose the tapping sound of a hairy woodpecker penetrating a tree hole in search of hidden insects.

"You still aimin' t' take that robber alone, Gus?" taunted Great-Uncle presently.

"I be dog if I don't have a try at it," said Gus.

"You're crazy, you idjit!" exploded Great-Uncle in alarm. "You'll get shot up, sure as shootin'!"

"Won't be any risk t' your hide."

Great-Uncle subsided into an angry muttering and strode jerkily ahead, his heavy bulk lumbering past into the lead.

"That pig-headed uncle a yourn ain't aimin' t' have no more truck with us, Old Timer," Gus said to me.

Great-Uncle turned. "'Tain't as if you had any real need a money. You got plenty. But here you're ariskin' your skin t' get holt of a couple a hundred. "Tain't bein' fair t' me. I'd be a missin' you."

"That's right nice a you, Joe," said Gus, smiling.
"I reckon I'd be missin' you, too, where I went."

We came to the house. Beyond us, the cattle were lowing up the pasture, already straggling toward the gate. A trio of pigeons fluttered up and down among the chickens Great-Aunt Lou was feeding.

She looked up as we bore down upon the farmyard. "Time for feedin', and here they come, cows and all," she said. "Hello, Gus."

"Hello, ma'am."

Great-Aunt's spectacles were slid down her sharp nose, her thin mouth paralleling the line of them across her face. Her alert eyes looked over the spectacles at us, her hands busy scattering grain to the chickens from the apron which she held sacklike from her thin body.

"Alec Hoopes was by and said as how they held up the bank at Lone Rock," she said.

"We seen him," answered Great-Uncle.

"Said he was all alone, no car or nothin'. Just stood up next Clint Hardy when he come to open up and stuck a gun into him and got into the bank that way and out again with the cash before anybody else come. He tied Clint up. Didn't get much, though."

"They's a reward out," Gus put in.

"And Gus is aimin' t' get it," added Great-Uncle dryly. "He figgers he c'n do it all by hisself."

Great-Aunt eyed Gus speculatively. "Likely he's as well off by hisself as with you around, Joe," she said.

The sun had disappeared behind the hills, though on upland fields its final light still shone redly, and in the northeastern sky cerise and purple lay on a tall bank of white clouds struck upward into the fading blue. Among the out-buildings and in the nearby woods, sparrows and juncos and chickadees were chirping out the day. In the western sky, a great fan of saffron afterglow rose into amethyst, and the evening star shone brightly forth.

Gus started away. "I'll be celebratin' on that re-Turn to page 42

Neither by size or appearance did Gus Elker look like an arm of the law. But craft and judgment count fully as much when it comes to apprehending suspects



REWARD --- WITH COSTS

BY AUGUST DERLETH

REAT-UNCLE JOE STOLL paused on the edge of the field, his head raised and craned forward a little. "Ain't that the deputy sheriff yonder?" he asked, shading his eyes. Gus Elker ruffled his strawy yellow moustache and turned his sad eyes toward the road, where a car had

turned his sad eyes toward the road, where a car had come to a stop and a tall, thin man had got out to tack something to a tree just off the highway. The sound of the hammer startled a blue jay to raucous life and scattered a flock of juncos across the November landscape.

"Sure looks like Alec Hoopes," agreed Gus.

The deputy sheriff finished his task and stood back to judge it. He looked beyond the tree and saw the three of us standing on the rise; recognizing Great-Uncle and Gus, he waved.

"Who're you sellin' out?" called my great-uncle.
"'Tain't no sale," Hoopes shouted back. "It's a robbery!"

The deputy sheriff had got into his car by the time we came up. He sat there now looking at us somewhat indulgently weighed down by ponderous authority.

"Where you people been?" he asked. "Ain't you heard about the bank robbery?"

"What bank robbery?" asked Great-Uncle.

Hoopes made an exclamation of disgust. "No wonder we ain't never catchin' any a them robbers hereabouts," he said. "When you people ain't even knowin' anything about it. They held up the Lone Rock Bank two days ago."

"How many was they?" asked Gus.

"Well, just one," admitted Hoopes reluctantly. "But he was a bad one. He looked ready to shoot, by all I hear."

"Did he git much?" asked Gus.

Hoopes nodded, but did not volunteer to state the

sum. "There's a reward out," he said. "It's about time they put a stop to it."

"Hoh! they! Who, they? You been appointed t' do it," said Gus.

"Can't do it all alone," said Hoopes, starting the car.

He drove away, and we turned to look at the poster on the maple tree. It was not large, though its WANTED letters were. Great-Uncle got up close and read it, pursing his lips, and pushing his moustache up against his nose. He leaned slightly forward, his heavy bulk leaving little room for Gus.

ANTED: Information leading to the arrest and conviction of the man who held up and robbed the Citizens' Bank of Lone Rock last Tuesday morning. He is described as a young man of medium height, with grey eyes, a wide mouth and thinning black hair, dressed when last seen in a shabby grey suit, brown shoes, and a red muffler with a broad yellow stripe running through it. He was wearing a shapeless black felt hat pulled down over his ears. Age, about thirty; height, about five feet, seven. \$250 will be paid for the arrest of this man."

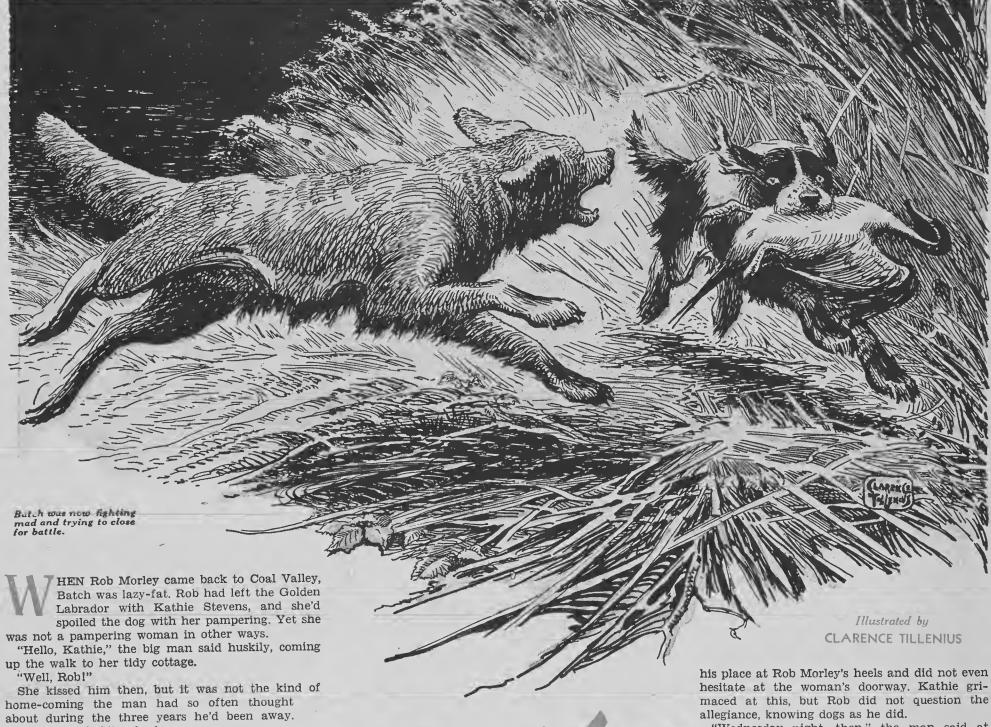
As nearly as I could estimate, it was the mention of the muffler that stirred Gus. He had listened phlegmatically enough to Great-Uncle's laborious reading until that point; from then until Great-Uncle finished, Gus was simply alive with impatience.

"I bet I know 'im." said Gus, his moustache quivering in his excitement. "I like t' died if I didn't see that man jest this mornin'."

For a moment Great-Uncle was himself startled. Then he sighed. "Hoh! You can't be tellin' much from what it says here. I don't reckon you saw him."

"I saw that muffler," persisted Gus doggedly. "It

was around 'im. And he was wearin' that grey suit,



She was still holding back.

Then old Batch came padding out of the house and flung himself at Rob and the man hugged the dog, muttering fondly into the animal's sleek ears. But he was aghast at the soft body on the grand old sport.

"Look at his waist-line!" Rob cried.
"He's in splendid shape," Kathie defended.

"Ye've spoiled him," the man said bluntly, but he fondled Batch's head and the golden dog whined with pleasure. "Ah, Kathie-I've thought many a time o' this moment, and now it's slipping by without any of the speeches said that I'd planned. But the main speech is always the same: Will ye marry me?"

Perhaps her eyes became moist for a moment, but still she held back and looked him over with a critical gaze, noting the hunting togs on him and the irresponsible candor of his grey eyes. The neat little dress-shop lady could not forget her long quest for security, so she put the question that should have been left unasked for the time

"Have you got a job?"

He smiled wryly at that, remembering the old arguments between them.

"Yes, I've got a fine job, Kathie. Mr. Parkinson, the mine owner, has asked me to take charge of his dogs again."

"Dog training!"

"Aye, and it's grand work for a man like me," he said simply. "Kathie, why will ye not say yes?"

"But what kind of a living could you offer me?"

"Lass, I'm offering you a living man, and a chance for you to become a full woman as a wife and possibly a mother. Kathie, there's no better living a man can offer a woman!"

She shook her head, smiling but vexed.

"Dog training again," she murmured. "It's a good enough hobby, but as a living! If you'd just get yourself a decent job of work and settle down to it-"

"Say no more," Rob Morley laughed, but without much mirth in the laughter. "It's all the same as before. You'll be staying in the ladies' shop and selling dresses, and I'm my own man once more. We'll see each other on Wednesday nights and Saturdays and argue, and on the way to and from church, Sundays. The same as before, Kathie!"

BACHELOR

Rob Morley and his dog worked as a team, such as is seldom seen

KERRY WOOD

"Ah, Rob! I've missed you sore."

"Lass, I've more than missed you."

Before he could say more, Golden Bachelor whined for attention. Batch loved hearing again the singsong Canadian-Scottish of his master's brogue and heaved his fat body up to put paws on Rob's chest.

"Look at the girth o' ye, boy," Rob was disgusted. "A fattie, an' you the best huntin' dog in all the Valley. Whatever did ye feed him, Kathie?"

"The same as you always did, but not so stingy," she answered tartly, holding wide the door for him to enter. The soft old dog followed at the man's heels and Rob grumbled again, for he did not favor letting a sport dog loll around indoors. Then they had their talk and accounted for the years away, and when the time came for the man to trudge back to his bachelor's cabin over the hill, Batch was serenely sure of

allegiance, knowing dogs as he did.

"Wednesday night, then," the man said at

She waved from the door, then hurried inside and hid her face in a pillow, crying to herself about the old loneliness that had ended and the new loneliness that had started. Yet she would not blame herself; if only Rob Morley were more like other men!

To others, Rob was a man's man. Mr. Parkinson, the mine owner whose pay sheets supported most of the town, loved to fill his big car with friends and drive to Morley's hill-top cabin on sunny afternoons to watch the trainer at work. Many a miner would be there during the offshifts. Most of them knew a bookful of lore about dogs, for coal miners have their slack times and during such periods they indulge their hobbies, with dogs prominent on the list.

"Look at that spaniel run!" Parkinson cheered. "Rob, will he do for the trials, this fall?"

"Prince, for the field trials? Ye've forgotten the hard mouth he owns—I've tried pins punched through me glove and tossed to his mouth careless-like, but still he'll find a place to chew. Och, no, Mr. Parkinson; Prince is not for the contests, this year or any

"Oh, I hoped we could enter a dog or two."

44A YE, an' maybe you can if you'll not be too keen for a top place. Young Tess of Burnside, she's the one who could carry your colors to show. Her mouth is gentle, and look at her dark eye and all the quiet wisdom in it. If ye must run these friendly black-and-white Springers, ye'll need to use the steady females."

"Prince has the speed, though."

"Aye, and the lack o' control that goes wi' wild racin'. T'm sorry if he's your special favorite, because it's my opinion he's not a trial dog."

'Whatever you say, Rob," the mine owner hastened to agree. "They're all my favorites, as you know. What about the setters?"

"Oh, we'll have a Llewellyn to show, but your Irishmen are too wild. Even the Wellys will need a trailin' rope behind them a-field and maybe a choke-collar, much as I hate the use o' collars. All the setters are rangin' too wide to be giving a field the best coverage. Duce has the finest nose o' the

(Turn to page 95)

A celebrated geologist suggests that prairie Canada may have enough oil and gas underground to meet its own requirements

> By G. M. LACEY

ROBABLE increased oil production from the Leduc, Alberta, field may bridge the present difference between demand and output and enable western Canada to supply entirely her own

oil requirements, and so eliminate the western portion of Canada's oil imports which account for a large share of our trade with the United States and contribute to our shortage of U.S. dollars. That was the view expressed by Dr. G. S. Hume, Chief of the Geological Survey of Canada, Department of Mines and Resources,

Before the late war, Dr. Hume says, refineries in the prairie provinces had little difficulty in obtaining crude oil. But with the war, and commencement of the Commonwealth Air Training Scheme, a heavy demand developed for aviation gasoline. The Turner Valley field, which previously had met much of the demand for crude oil, in February, 1942, produced 28,-400 barrels daily. This was the peak output and thereafter Turner Valley production declined steadily. The increased wartime demand made oil supplies more and more difficult to obtain.

Under a very liberal arrangement with the Petroleum Administration for War, in Washington, Canada received from the United States the same consideration of her oil needs as the individual states. The Dominion Government imposed price control and paid a subsidy (a total of \$11,807,729.51 was paid from December 1, 1941, to December 31, 1946, on oil imported into the prairie provinces, according to the Wartime Prices and Trade Board) on crude oil brought into Canada. Although in western Canada production dropped from 10,136,296 barrels in 1942 to 7,137,693 barrels in 1946, increased demand rather than decreased productivity accounted for the acute oil shortage on the continent.

A study was made of the west flank area of the Turner Valley field, previously considered uneconomic from a commercial standpoint. It was estimated the 20 wells might produce one million barrels of oil. The limestone in the area is of low porosity and low permeability, but in wartime it was not altogether a matter of dollars and cents to be considered. Drilling was started under supervision by Wartime Oils, a new Crown company which was financed by the Department of of Munitions and Supply.

JP until June, 1947, 22 wells were drilled, of which 21 were successes, and up until August 31, 1947, production from these wells was 1,400,000 barrels of oil. The 2.75 million dollar value of oil produced does not pay the drilling and operating costs. However, Dr. Hume points out, when the subsidy of one dollar per barrel, which was paid on imported oils, is taken into account, the proposition was almost a paying one and now is likely to become so.

The continual increase in the contin ental demand for oil would find Canada facing an acute shortage if it were not for the Leduc field, discovered in February, 1947. Drilling depths are not great in the area and two horizons in dolomite rock, separated by green shale, have produced oil. Outlines of the field are indefinite, the northeast and the southeast sides

sharply limited,

PRAIRIE OIL RESOURCES

but with room for expansion in other directions. Consideration of the field is based on relation to shortages. In the prairie provinces at present the demand for oil exceeds by 20,000 barrels a day the supply of domestically produced oil, which presently stands at 17,720 barrels per day.

If Leduc is to provide these 20,000 barrels, 130 to 150 wells of similar capacity to the 20 wells now producing in the area are needed immediately. The normal decline in production will have decreased the

calculated average output in the earlier wells by the time the last of the 130 to 150 wells are drilled, since 30 to 45 days are required for drilling a well in the field. Continuous drilling will be necessary to keep up the rate of production from the field.

A Leduc reserve of 50 million barrels of recoverable oil has been estimated. This, Dr. Hume believes, is a very conservative estimate and possibly may be doubled. The reserve compares with the 90,300,000 barrels produced by Turner Valley since 1924. The wells are on 40-

> acre spacing and a minimum of 6,000 presently drilled acres would be necesary to meet the demand for crude

With oil from California going to the Far East to supply the United States Navy and our own navy during the war, and the threat of

west coast, our Oil Controller looked elsewhere for supplies. Light oil was obtained from Ecuador and Vancouver got oil from Colombia. The subsidy was heavy. West of Jasper fuel oil is used in locomotives. No steel was available to make possible a change over from oil burning and no coal was obtainable if the change over had been possible. The Oil Controller advised the Canadian National Railways that the time was opportune to try development of an oil supply in the Vermilion field.

Oil was discovered at Borradaile, six miles east of Vermilion, in 1939. Cannar Oils, a subsidiary of the Canadian National Railways, was formed

and drilled more than 30 wells in the area. The Vermilion field yields low grade oil,

Left: Imperial No. 1 standing among the stooks in the new field at Leduc, Alta.

Above: Imperial No. 4 stages a display at Leduc.

suitable for fuel when cleaned, but emulsifies easily when agitated. Pumping causes emulsion carrying sediment. As all wells in the area are on pump, a cheap method of cleaning was needed. A dehydration process was made

available by California. In the process the emulsion is broken, water gathers in large globules in warm oil and sinks to the bottom, carrying the silt and sediments with it.

The Vermilion field supplied much needed fuel oil during the war, and up until June, 1947, production totalled 913,991 barrels. Present monthly production is 11,000 to 12,000 barrels from 45 wells.

Results at Vermilion stimulated the oil search in central Alberta and western Saskatchewan, The Dina field, near the Saskatchewan border and 40 miles east of Wainwright, Alberta, was discovered in 1926. Gas which supplies the town of Lloydminster, and some oil, was found in 1934 at Lloydminster, but until 1945-1946 the field was thought not important. Now, with production at Lone Rock, about 20 miles southeast, and the Blackfoot area, about

seven miles west, the Lloydminster territory, which also includes and extends the old Dina area, approximately 30 miles south of Lloydminster town, produces almost 3,000 barrels of oil per day. In September the yield of its 103 producing wells totalled 94,445 barrels, bringing production for nine months to over one-half million barrels. Further rapid expansion is

There are now flowing wells in the field, and yield is better than most pump wells give. The oil is heavy crude (the same type as that obtained from the

Alberta tar sands) suitable for asphalt, and has a better base than high grade oil from Turner Valley. Oil also has been discovered in the Kitscoty area, 14 miles west of Lloydminster.

In recent years, other comparatively small fields have been found in southern Alberta. These include the Princess and South Princess, Conrad, Taber, and West Taber fields. Drilling for oil has started at Hanna, where light oil was found in a well drilled for gas; Canadian Gulf Company is drilling south of Pincher Creek, and

drilling is in progress throughout the foothills.

The Viking-Kinsella gas field supplies Edmonton and towns south as far as Red Deer, and Imperial Oil has proven up a producing area there of 450 square miles, 150 to 300 thousand acres. Gas wells are drilled about one per square mile and wells are known to yield five, ten, even 20 million cubic feet of gas per day. Plants to produce synthetic gasoline reasonably could be built.

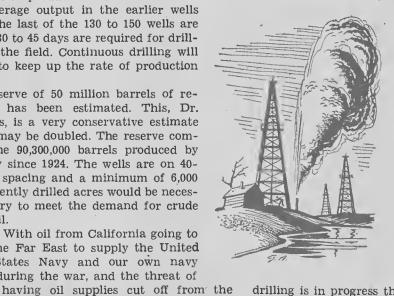
McColl-Frontenac, Union, Shell, and others also have been active in the development of gas areas. Productive fields have been found in southern Alberta at Foremost, Pakowki Lake, Manyberries, Pinhorn and other points. Shell Oil has outlined a large volume of gas at Jumping Pound, 20 miles west of Calgary.

Unity, Saskatchewan, and many Alberta towns have separate gas systems. Natural gas is an ideal fuel and gas in Alberta seems sufficient to supply the province's requirements and leave a large volume available for other markets. Dr. Hume foresees the possibility that some day gas from Alberta may be piped to industrial Ontario, supplying prairie cities en route.

In this regard he cites the pipeline now under construction in the United States. From the north end of the Texas panhandle this pipeline will supply 300,-

000,000 cubic feet of gas (equal to 13,000-14,000 tons of coal) to Los Angeles. Part of the pipeline is 24-inch, part 26-inch, and the final part will be a 30-inch pipe. Should the piping eastward of western gas become feasible, fuel advantages to cities

(Turn to page 67)



N the east central portion of Alberta, there is an area of hilly grass country deserving of a place in the story of Alberta agriculture. It is known as the Neutral Hills district. It is reached by going east from Stettler and Coronation, or west from Kerrobert, Saskatchewan, to Loyalist, and then straight north toward Czar.

After you have driven north along a good gravel road close to 17 miles, keep your eyes peeled to the right for a small white house some distance off the road. It is almost hidden by the contour of the land, but you can recognize it by the fact that the farm has a windmill. If, when you drive in, a tall man a little past middle age, with sandy complexion and not as much hair as he once had, approaches you very courteously, you can be sure that this is C. D. Lane, owner of the ranch.

Now, this story isn't about C. D. Lane at all, so he has to be disposed of. It isn't going to be easy, in spite of his modesty; and he will probably creep into the story here and there as we go along. We can't very well disregard a man who has been in the forefront of progress from the beginning, and who, in addition, is a director of the Alberta Livestock Co-operative, and a member of the Special Areas Board of the Province. However, we must do the best we can.

Before leaving the ranch, which occupies four sections, of which one is owned and three are leased, of course we had to see the cattle and the view from the top of the high hill, which has an altitude of about 2,600 feet. The cattle number about 150 head, and are all grade Herefords, except of course, the sires. They illustrate, as well as anything I have seen, the extent to which an excellent commercial herd can be developed in ten years, by good management and the consistent use of purebred sires.

It wasn't easy to make the long hill to the lookout point on top. In fact, the six-year-old Guide car gave it up on the first try with a snort of disgust. However, we took her around to another place where she could see all of the long slope, I said "giddap" with the right emphasis, and she took the five of us to the top like a scared rabbit, missing every stone hidden in the long grass along the way.

ONCE on top, a magnificent view was spread before us. East and west, our view was marked by other hills, but north for 23 miles to the next line of railway and as far as the eye could see, was waving grass in sloughs and variable contours, dotted by small, dark areas of shrub and tree growth in some of the more sheltered places. Southward, our view was uninterrupted for nearly 20 miles. Sixteen miles away we could see a train, the smoke of its engine showing faintly against the July sky. These then, were the Neutral Hills and the territory surrounding them. Off to the northwest were the Black Hills. The grass cover and the territory surrounding me was very similar to that of the Cypress Hills in southwestern Saskatchewan. It included a large proportion of gramma grass, Kentucky blue and spear grass.

Coming up from Loyalist by road, neither I nor anyone else could be much impressed by the farmsteads and any evidence of prosperity along the way. Buildings are very modest and inexpensive. Years ago prospects appeared bright for a railway within 11 miles of C. D. Lane's ranch. The railway was surveyed and some grading actually done. That was all, and as a result, there has been very little additional building ever since. The grassland, of course, is of somewhat variable character, but generally speaking will carry about one mature animal to 30 acres. The ranches and farmers operate by various combinations of enterprises. There is very little grain feeding of cattle. Lane himself has 100 acres of crop land. Some operators have little or no crop land and after pasturing on the home ranch as long as the pasture lasts, move their cattle to winter

pasture. Of special importance is the fact that practically all cattle in the area are grade Herefords, and this characteristic dates back to July 29, 1937, when our story really begins.

If this story is about any individual, it is about the late Art Newman, who for a number of years was fieldman for the Dominion Livestock Branch (now Production Service) and resided at Lacombe. Through the bull-loaning policy of the Dominion Department of Agriculture, contact had been established with farmers of the Neutral Hills area, where over-grazing was common, and cattle marketing condi-

THEY REMEMBER ART NEWMAN

> Farmers and ranchers of the Neutral Hills area in Alberta give credit to the man who led the way to livestock improvement

> > By H. S. FRY

tions were less satisfactory than in a number of other districts. Some livestock improvement was called for, and this was begun through junior forage clubs, first organized in October, 1936. These led to interest on the part of parents, who formed the first local agricultural association, patterned after the organization in the Dickson, Alberta, community. Dr. S. E. Clark, then of the Dominion Range Experiment Station at Manyberries, Alberta, was brought in to discuss range and pasture problems, and soon a considerable group of agricultural improvement associations were organized in the Neutral Hills area.

O^N July 29, 1937, a meeting was held at Gooseberry Lake at the time of the U.F.A. convention. At this meeting the Black Hills Agricultural Association and the Neutral Hills Agricultural Association got together for the first time. The 37 cattlemen present set up the Neutral Hills Livestock Board, the purposes of which were to improve marketing conditions, to gather and distribute market information, list cattle for sale, conduct an aggressive campaign for the elimination of scrubs and unsuitable livestock, eradicate warble fly, and co-operate with the departments of agriculture, the livestock buyers and the Western Stock Growers' Association (managed at that time by Jack Byers). Chairman of the newly-organized Board was C. D. Lane, Neutral Hills; vicechairman, Jack Gibson, Consort; secretary, J. L. Fiske, Cadogan; with K. G. Wiles, Pemukan, and J. E. Bowers, Veteran, as the remaining members of the Board. When the Board met late in May, 1938, they were able to report that 2,292 head of cattle had been listed for sale, and the Dominion representatives and interested parties had agreed that organization had effected a saving of from \$8,000 to \$10,000 for the district in the meantime.



The late Flight-Lieut. Arthur Newman who died while on active service with the R.C.A.F.

This development, and therefore everything which has followed it, is traceable in large measure to the late Mr. Newman. He had, in fact, paved the way for the meeting at Gooseberry Lake by organizing the Neutral Hills Grazing Association in April of 1937. This was in direct consequence of departmental willingness to supply purebred sires to organized groups of cattlemen, provided they were able themselves to supply bull for bull with the government. Therefore, following the first meeting of the Neutral Hills Grazing Association, 583 cows were listed, and the government provided its proportion of the purebred sires. By 1939, 15 purebred sires were in service, and the number of cows was 505 and the number of calves 439. By 1947, after ten years of cattle improvement, the farmers owned 17 purebred sires and the government supplied an equal number, all Herefords, with the exception of one Angus. This concentration on one breed was made following a decision in 1937 that the Hereford was the most suitable breed for the purpose, and that there were distinct advantages to be gained from uniform breeding. Once the Neutral Hills Livestock Board was formed, it became the focal point for a much wider movement in the direction of livestock improvement. There were other groups of agricultural improvement associations formed in the Sounding Creek district, while still others were the Coronation-Stettler, the Camrose-Provost, and the Youngstown groups.

NEWMAN'S desire for livestock improvement in the area was insatiable. Having inspired the Neutral Hills Grazing Association, and laid the foundation for the Neutral Hills Livestock Board, he urged the organization and the various groups of agricultural improvement associations into what became the Central Alberta Livestock Association. Pointing out that the annual loss per head of cattle from warble

flies was estimated at that time to be \$2.50 per head, he said that "if to this loss were added the loss to the industry as well as menace to public health due to tuberculosis in cattle and swine, the bot fly in horses; low grade market cattle because of poorly bred and poorly fed stock; range depletion by overgrazing, grasshoppers and other losses, we can realize that we have the means of greatly increasing the efficiency of our industry lying in our own hands, if we can effectively co-operate to control the causes of these losses." The warble fly problem

had been under considera-

(Turn to page 64)



[Guide photo. C. D. Lane, Mrs. Lane and their two sons look north from the Neutral Hills over many thousands of acres of good grazing land.



Bill Gary's note starts three men on a hunt for a mine location and for Frosty

By MAX BRAND

PART II

FTER a while big Bill Gary stopped meditating about death because he was tired of it, and because a cold wind began to thrill through his wounds. Their pain had joined. The pain from the wrist rose up the arm and at the shoulder it encountered the pain from the wounded thigh, which possessed all the rest of the body.

Bill Gary was tired of sitting there. If it were better to meet death sitting down than lying down, it was still better to meet death in action than in repose, so he began to act.

He crawled out of the clearing, out of the strip of trees, and to the verge of the treeless waste of snow. He was a mile above the cabin, and he started for it, not because he thought that he had strength to get there, but because he despised inactive waiting for the end

It was easier than he expected. It was the sort of a thing that one can do more easily than think. To crawl a mile would have been totally impossible, and he could not have gone a hundred yards up a slope, but this was different. He had snow under him all the way, and there was a continually declining slope to the ground. He could half roll and half slide. He moved his body like a fish wriggling through slime rather than like a land animal. He received a heavy battering before he got to the bottom of the rise among the trees that shrouded his shack. He half rolled and half crawled to the cabin, and fainted on the threshold of it.

When he wakened again, a few minutes later, he found himself much weaker. There was a hurrying pulse in his temples like a clock ticking all out of time. Everything that his eyes looked on shuddered as though an earthquake were shaking the ground.

He said to himself: "Bill, you're going to die, you old fool!"

Then he thought of the mine again, and he was

sorry that he had enclosed the news of it in the collar of the wolf. If he had only known that he could reach his cabin, he would have waited and written a letter. Then, with his pair of smokes, he could have called up Warner and confided the letter to him to be mailed, a month or so later, when Warner went to town.

He would still be able to write the letter, he told himself. He was going to die, all right, but not immediately. There was the sort of metal in him that rubs out only after long and constant friction.

HE dragged himself to his knees and got to the table of soft pine, which he had made himself. He had built a drawer under that table. He was prouder of that drawer than of almost anything he had ever done, because it was a homemade luxury such as most men of the wilderness would not have considered worthy of thought. It was this drawer that he drew open, and then he worked himself up onto the bench that ranged beside the table.

Then he lay across the table for a moment, nauseated more than ever, his brain whirling. He wished that he could die without being sick at the

stomach.

He pushed himself erect. The top of the table was new and white because it was only recently made, and planed down. Now there was blood on it. In his rolling, sliding descent, his clothes had been caught and torn in many places; his flesh had been caught and torn, also.

He got out of the drawer a sheet of letter paper and an envelope. In indelible pencil he wrote the address first:

MR. ALEXANDER GARY,

Newlands.

Then he started on the sheet of paper:

DEAR ALEC: I'm done for. I got Frosty, and Frosty got me.

I've tapped open the biggest vein of gold, today, that you ever seen. Then I caught Frosty in a trap, and he chawed me almost to death.

I took and wrote out the description of where to find the mine and put one of my dog's Red Cross collars on Frosty and put the description in the collar and turned Frosty loose, because I thought that I sure never would—

His hand paused.

It was hard work pushing the pencil, because it bit not only into the paper, but also into the softness of the wood on which the paper smoothly rested.

There was a cloud before his eyes. This time it was not whirling, but it was thickening and moving up on him, little by little. He rubbed the back of his hand across his eyes, but that did not help very much. The darkness kept on growing.

He got out the flask of whisky. He could not uncork the flask with his numb fingers, but he worried it out with his teeth. He drank the rest of what was in the flask, holding the neck of the bottle between his teeth

HE was no longer nauseated, and he was glad of that. He told himself that perhaps he would not die. He wanted to go to sleep for a minute, and after that, he would wake up and finish writing the letter.

> Alec Gary was a good kid, and Alec ought to have the mine—if Bill Gary died.

Bill Gary put his forehead on his right arm. Everything was confused, and red lights began to move in his darkness, not whirling about, but wavering toward him like lanterns swing-

ing at the sides of walking men. He closed his eyes harder. The darkness grew complete. He slept.

That was the way Barry Christian and Duff Gregor found him. It is hard to say that blind chance brought Barry Christian, the greatest of all criminal brains and hands, through the mountains at exactly the right time to find Bill Gary dead with the news of the finding of the gold mine written out on a piece of paper. It is easier and more convenient to say that there was a malice in Fate which had designed this happening with malignant care.

For many miles now, Barry Christian and Duff Gregor had been fleeing. They had had almost a dozen men about them in the beginning; they had only themselves now. For Jim Silver had hounded them closely all the way. He was still hounding them, perhaps, unless the strength had finally departed out of the tireless limbs of Parade, the golden stallion.

A great, bright ghost, Parade had stridden over the leagues behind them. All the others among the pursuers, gradually, had dropped away. All the others of the fugitives had been worn out and turned to this side or to that.

Only Barry Christian kept on, with Duff Gregor. Gregor himself, big and strong as he was, would

have fallen away with the rest, except that Christian gave him extra support and help, the reason being that the resemblance of Gregor to Jim Silver had been helpful to Barry before and might prove helpful again. So Christian kept him along.

They had worn out one set of horses after another. Where they could buy horses, they bought them. Where they could not buy horses, they stole them. They crossed the Bull's Head Range on foot, a hundred terrible miles that Christian forced Duff Gregor to travel. He walked behind Gregor.

The last twenty miles, he beat Gregor like a beast, with his quirt. When Gregor fell from exhaustion, Barry Christian kicked him to his feet again and forced him to travel on.

They got horses on the other side of the range. Christian tied Duff Gregor into the saddle and led the horse ahead, while Gregor lay senseless with sleep. That was the way they had managed to keep out of the grasp of Jim Silver on Parade. That was the only way.

It might be that on the edge of the Blue Waters they had shaken the great Silver off the trail. It was more likely that Silver was somewhere behind them, either reading their sign or else guessing with his accustomed uncanny accuracy what was going on inside their minds. Duff Gregor, for his part, felt that death itself was almost better than being pursued any longer in this fashion. The pain of death could bite him to the bone only once, whereas now he was dying every day of his life, a hundred times over.

THE big body of Duff Gregor looked more like that of Jim Silver than ever before, for the immense labor of the flight had taken away all excess flesh and left him with his shoulders broad and heavy and the rest of the body tapering off.

His face looked more like the face of Silver than ever, also. It, too, had been refined by agony. Only his forehead was different, for the brow of Silver always held a sort of gloomy serenity, and the brow of Duff Gregor was heavily contracted.

As they came up the hillside, this day, it was Gregor who first noticed the hint of a trail and said:

"Somebody lives not far from here."

"We'll find 'em all right," said Christian.

"So that we can leave our trail posted for Silver?" asked Gregor satirically.

The pale, handsome face of Barry Christian turned toward his companion, and he smiled. His gentle and musical voice answered: "We need fresh horses, partner."

"Not likely to be horses, where we're heading. This isn't a horse trail, you can see."





"This isn't a horse trail, but there may be horses, and if there are not horses, there may be burros. Anything will be useful. Even a dog."

"You mean," said Duff Gregor, looking about the tips of the trees at the blue-white of the sea above timber line that extended into the sky, "you mean that you're really going to cross the Blue Waters in

"Not in one march," said Christian. "We'll camp for one night up yonder, and freeze and chatter our teeth till the morning. And then we'll go on again and try to finish the crossing tomorrow."

"I'd rather turn around and face Jim Silver," cried out Duff Gregor, in a passion. "I'd rather face him and have it out with him. Look! We're two men, and he's only one!"

Barry Christian looked not at Gregor, but down at his long, graceful hands.

Many a man said, and was willing to swear to it, that those famous hands of Barry Christian were even more dreadful with weapons than were the hands of Jim Silver. Even if they were not, there could not be very much actual difference between the prowess of the two men.

"You can beat him all by yourself, Barry!" cried Duff Gregor. "You can beat anybody in the world, if you make up your mind to it."

BARRY CHRISTIAN slowly shook his head. Sorrow came into his face and made it handsomer than ever-like the face of one suffering spiritual pain beyond the concerns of this earth of ours.

"Silver's beaten me," he said. "He's beaten me with his bare hands and he's beaten me with guns. He's out-tricked and he's out-fought me. Sometimes I even think that the only reason I'm permitted to be alive is so that the young men of the world can have the spectacle of Barry Christian being kicked around the world by the great Jim Silver, the upholder of the law. That's a moral sight. Deters the youth of the country from crime.".

Duff Gregor suddenly grinned. When he smiled, all the brute in him came out, and his entire resemblance'to Jim Silver flickered and then went out.

"By thunder, Barry," he said, "when I hear you talk like that, it's as good as reading a book. You say the queerest things!"

"Do I?" asked Christian softly.

No one could tell what he meant, when he looked and spoke like this. Sometimes Duff Gregor half expected to have his throat cut and be left by the trail. That would be the instant that Christian decided that Gregor was more of a present encumbrance than a future assistance. In any case, he would not want Gregor to fall alive into the hands of his enemies. Gregor knew too much.

"Perhaps you're right," said Christian. "Perhaps I should have been a teacher or a minister, or some such thing, leading a secluded life, and trying to help other men toward a vision of the truth."

Big Duff Gregor filled the woods with his bawling laughter.

"There you go again. You sure beat me. You beat anybody. You're a scream, Barry! Hey, there's the

Through the tree trunks they saw the broken picture of the little house. Falling snow obscured it, also. The sky was filled with deep miles of grey that promised a soft ocean of snow to descend upon the

CHRISTIAN went in first. He was always first, when Gregor was his companion, because he profoundly distrusted everything that Gregor was apt to do in an emergency. He detested Gregor with all his soul, as he would have detested a false coin. But still, the resemblance between the man and the famous Jim Silver was too great to permit him to be discarded. Counterfeit he was, but even so he might be of immense use in the future.

At the door of the shack, Christian saw the great body of Bill Gary spilled across the table. He called, got no answer, and stepped to the table. His head was still bent above the still figure when Gregor asked calmly: "That mug is dead, isn't he?"

Christian slowly lifted his head and looked toward

"Yes, he's dead."

Big Gregor stepped to the table and stared calmly down at the body. He had seen plenty of death-since he had joined the forces of Barry Christian.

"Look at—His left wrist is all torn."

"I see it," said Barry Christian.

He picked up the loose weight of Bill Gary, grasping him under the armpits, and dragged him toward the bunk that was built against the wall. A paper fluttered from the top of the table to the floor.

Gregor picked up the feet of the dead man and helped lay him on the bunk.

"Torn all to the devil," said Gregor.

"Something got at him. Dogs — wolves," said Christian. He looked around the shack at the extra traps. "A trapper, and the wolves got him."

Gregor picked up the fallen paper. Christian was pulling a blanket over the face of the dead man, and, turning, he asked:

"What was that?"

"That? What?" asked Gregor.

"That thing you picked up."

"Oh, nothing."

"You certainly wouldn't pick up nothing."

Vaguely outlined through the falling snow in the twilight, Silver saw the

Illustrated by CLARENCE TILLENIUS

"What could a gent pick up in a place like this?"

"There was a piece of paper."

"Yeah. With some stuff scribbled over it," said Gregor.

"Let's see it."

"Ain't worth seeing."

Christian held out his left hand. Their eyes met, and those of Gregor fell away.

"All right," he said. "Just a crazy idea out of a dead man's head."

"Dead men tell the truth, if they talk at all," said Christian.

He took the paper which Gregor had crumpled, thrusting it into his pocket. Christian spread it out and read the contents aloud.

"DEAR ALEC: I'm done for. I got Frosty, and Frosty got me.

"I've tapped open the biggest vein of gold, today, that you ever seen. Then I caught Frosty in a trap, and he chawed me almost to

He paused and looked at Gregor. Gregor hung his head.

'I thought it was just a crazy lot of drool," said Gregor.

Christian said nothing. He continued to hold Gregor with his eye, like a fish dangling, dying at the end of a line. Then he went on with the remaining few lines, reading them aloud, quietly.

He lowered the paper and then

"Nerve. That's what that dead man had. He travelled quite a distance on that ruined hand and spoiled leg. He crawled and rolled and slid. See how his clothes were torn to pieces?"

"Yeah, I seen," said Gregor.

"Think that there's anything in the drool?"

"You know there's something in it," answered Christian. "You're dead certain that there's something in it. Otherwise, you wouldn't have planned to hold out the paper, duck away from me, and finally come back to this part of the world and look up Frosty."

"Hey, listen, Barry—" began Gregor in a pleading

Christian bit his lip as though to keep it from curling with contempt.

"I understand," he said. "I know you pretty well, Gregor. But I hoped that I didn't know you as well as all this."

"You take it pretty hard," said Gregor, "when all I meant was-'

"Quit it," said Christian.

Gregor was gloomily silent.

Barry Christian picked up the en-

"This letter ought to go," he said, "to the hands of one Alexander Gary, in the town of Newlands. Unfortunately for him, however, he'll never see it. The



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Smoking Out the Profiteers

The rising cost of living is causing widespread concern throughout Canada. Month by month the gap between family income and outgo in the low income groups is becoming wider. Standards of living are going down. Questions are beginning to be asked regarding the maintenance of national health. People everywhere are fearful that if the rise in prices is not halted it will end in depression and disaster. Taking the official figures based on 1935-39 costs of living as 100, the index rose to 146 in January and is now probably over 150. It rose by 2.4 points in one month and 23.4 points in one year. Canada's splendid record in holding the price line under war-time controls has been undone. Mr. Bracken told the House on February 2 that the cost of living bears more heavily on Canadian than on American citizens; for while industrial wages in Canada are 70.3 per cent of theirs, the cost of living is 77.7 per cent of their cost.

The basic cause of the trouble is, of course, the world-wide shortage of goods coupled with effective demand. Other causes contribute to the accelerating price rise but there is the widest disagreement as to their relative importance. Tory members at Ottawa attribute all our troubles to government mismanagement, or to labor demands. The C.C.F. lays the blame on the ill-considered removal of controls and subsidies. Still others charge that there has been a withholding of stocks in anticipation of price increases. In the background lurks the profiteer.

To satisfy the public outcry, Parliament has set up a special committee of inquiry. It was not the kind of committee the opposition groups wanted. Its scope of inquiry is narrow. It will make no recommendations. It will lodge no profiteer behind the bars. It will merely report to Parliament, probably after the loss of much valuable time. Nevertheless the committee got to work in mid-February and has already taken evidence from Toronto fruit and vegetable retailers as to wholesalers' profits ranging from 38 to 240 per cent. What the wholesalers have to say about the part played by retailers in boosting prices has yet to be heard, and may make equally interesting reading.

As far back as last September, Rt. Hon. J. L. Ilsley warned the business fraternity that free enterprise was on trial; that merchants were its custodians; that it was neither proper not good business to charge all the traffic would bear. Undoubtedly the vast majority of Canadian business men have acted in that faith. Unfortunately it is not universally true. As good an authority as Hon. Humphrey Mitchell, minister of labor, states that there has been profiteering. The people of Canada wait expectantly for condign punishment to fall on those who have taken advantage of public necessity in times like these. There will be little patience with the view that public opinion can be trusted to deal adequately with profiteers. The temper of consumers is being sorely tried. Circumstances require that there shall be no delay. If private enterprise is to survive, its chief enemies, those who under the spur of greed have abused its privileges, must be summarily punished.

Palestine

Palestine presents an issue which may become as damaging to the prestige of the United Nations as Ethiopia was to the League. Under American persuasion the Assembly was induced to recommend partition, in spite of Britain's repeated refusals to enforce a settlement which was not agreed to by both Arabs and Jews. It should have been realized from the outset in the United States, as it was in England, that partition would require force, and that it was courting trouble to become committed to the principle of partition without making advance provisions for the military strength to impose it. The Jewish Agency promoted the naive hope that the Arabs would be overawed by the spectacle of the two most powerful nations in the world agreeing on partition. Such a view fails to appreciate the length to which a fighting race like the Arabs will go in resisting the break-up of their country. It implies a respect for the enduring quality of Russo-American collaboration which the Arabs are not likely to share. In any case the Arabs are organizing their strength for a fight to the finish, and as we write the Security Council is meeting to discuss the formation of a military arm to enforce its final decision, whatever that may be.

Three courses are open to the Council if it does not modify the Assembly recommendation for partition. It may sanction a mixed force in which American and Russian troops will predominate. It may turn the assignment over to the U.S.A. which has taken the lead in upholding Jewish pretensions. It may authorize a small nations force supported by American and Red gold.

The Americans will not readily assent to the first course. Their interests require that the Russians be kept out of the eastern Mediterranean. Once the Russians have established themselves in Palestine it would be as difficult to get them out as it has been in Germany, Korea, and elsewhere. A Russian stronghold in the Holy Land would be a fresh centre for the spread of communist strength and would undermine Greek and Turkish resistance to the Red tide.

The Truman administration is equally disinclined on the eve of a presidential election to take over Britain's thankless job of keeping the peace. There is a strong sentiment in the U.S. for reducing their military forces abroad. A new and serious large-scale expedition will be unpopular. American enforcement would incur immediate hostility throughout the whole Arab world and might shut off oil supplies which are necessary to fuel the Marshall plan. Whatever power accepts the job of setting up the new

Jewish state has no guarantee of its lasting thanks; witness present-day condemnation of Britain by the Jewish Agency, "an all-time high in political ingratitude."

Under these circumstances the creation of a force among the smaller states may look very attractive to the U.S. Canada would be expected to make an important contribution to such a force because of the lead taken by her representative, Rt. Hon. Louis St. Laurent, in the participation debate. Canadians are not unwilling to bear their fair share of international action to preserve the peace of the world. But public opinion will be slow to classify Arab defense of their lands as aggression. It will want better proof that there is no alternative to the establishment of political Zionism. The recent murder by Jews of wounded British soldiers in Palestine hospitals has created a reaction among returned men here which will make the recruitment and maintenance of voluntary Canadian forces to support Jewish expansion a highly unpopular undertaking.

Breath of Spring

Poor, harassed humanity seems destined to have its few moments of joy marred by trouble. The first note of spring is blurred by the strident discords of the income tax which no listener can tune out. This year the western farmer has for his own exclusive use a new, attractively printed tax form, big enough to wrap a bachelor's laundry. It needs to be, for the department has thought up some new headings to simplify the taxpayer's job of writing his own mathematical autobiography. In the same spirit of helpfulness the Income Tax Branch has this year issued thousands of income tax account books to assist farmers who are not versed in the intricacies of higher accounting. The fortunate farmer who got one of these early enough in 1948 can refer to it every time he makes a transaction from now till December 31 and, lo! when he goes to make up his income tax statement a year from now everything will fall into place because the reference numbers in the book correspond to the paragraph numbers on the new tax form. As the department got the inspiration for the new form and the account book at the same time, the latter will not help in making out the form for 1947 income.

The new tax form includes one fresh departure which the farmer will take very seriously. For the first time he is required on page five of the form to make a statement of his net worth. In other words he is to provide the tax collector with a check on the accuracy of returns in former years. Many a taxpayer with no intent to evade



When strong men quail.

due tax payments, either now or in the past, will look askance at this invitation to check his bookkeeping against that of the expert accountants of the tax office. The defense of the department will be that it asks no more of the farmer than it does of the business man who is forced to file a yearly statement of assets and liabilities as well as a statement of current income.

For the few farmers who are competent book-keepers, the new form presents no puzzle. For the rest we predict that outside assistance in completing the form will be in greater demand than ever.

Czechoslovakia Falls

Czechoslovakia, historically and by inclination a democracy, has fallen to the Communists. In eastern Europe, only Greece, Italy and Turkey remain nominally democratic. During three years since the close of the war in Europe, Soviet power and influence has obtained a firm grip on Poland, Eastern Germany, Rumania, Bulgaria, Yugoslavia, Albania, Hungary and Czechoslovakia.

Such a triumph—for it is a triumph, however basely won by our standards—could not have occurred in a really democratic world. It could not have occurred in the Europe of today, but for two sets of circumstances. One of these is the chaos left in Europe by a war unprecedented in history.

The other set of circumstances lies in the nature of democracy as we know it. Our democracy is not perfect, and we are aware of this. It gives comparatively free play to individual initiative and ability; and does not make the citizen a creature of the state. It rests upon the will of the people, who maintain and direct the state; and it has this further virtue, that it tends to add dignity to citizenship and to provide reward for merit freely earned and freely respected. It has not eliminated either urban or rural slums, or fairly distributed either wealth, opportunity, or education, but it does aim to elevate human dignity, to avoid force, and to govern by consent.

Believing, as democratic nations do, that other nations are entitled to govern themselves after a manner determined by full discussion and free choice of their citizens, it would be impossible for the democracies to do as Soviet Russia has done in eastern Europe and has tried to do elsewhere, namely, to achieve the overthrow of foreign governments by infiltration, the undermining of confidence and force. The way of democracy is longer and slower, but it has not yet lost out in the long run.

The Food Contracts

Britain's financial position has worsened since the Canada-U.K. food contracts were announced at the beginning of January. At that time Britain would have preferred to get along on what beef, bacon and eggs she could buy from sterling countries and contract with Canada only for cheese, though retaining her four-year wheat agreement. This agreement, Sir Stafford Cripps told the British press recently, "gave us the advantage of purchasing wheat at half the price we would have had to pay in the United States." The cheese, beef, bacon and egg contracts, finally concluded with difficulty, were firm as to quantities, but subject to review as to financial arrangements, at the end of March.

This experience, still of uncertain outcome, illustrates the difficulty of walking a tight rope on wooden legs. Canada, a dollar country, has tied her surplus food products to a sterling market, Britain. At the same time she has spent her dollars so freely in the United States, that at a crucial period she could no longer protect the market she had chosen for practically all of her farm surplus. Barred by government decree from other markets, and conceivably about to be temporarily cut off from the only market remaining, Canadian agriculture is now experiencing the uncertainties of stability by dictation. When governments decide to run the farmer's business, they go at it in a big way.

Under the PEACE TOWER

HIS is a story about Mr. King and the Rabbit. Ever watch a magician? You will notice that if he is up to some trick—and magicians have every right to be up to tricks—that the first thing he will do will be to roll up his sleeve.

"You see, there is nothing here," he will say.

Then he may push his sleeve back further, and repeat again that there is indeed nothing there. Finally, as a comedy touch, old-time magicians used to tap their heads significantly, and say, followed by a chorus of laughs: "And ladies and gentlemen, nothing there!"

Now what you and I and the other gulls in the audience have not noticed was this, that while we were watching the one hand, the legerdemainist was popping a rabbit into his hat with the other hand. This is what is called misdirection, and it is the oldest trick a prestidigitator has. What I mean to say is, that our Ottawa politician-magician is doing nothing forbidden by the Ancient Order of Magicians.

When and how he is going to bring that rabbit out, I don't know. What it will be, I do not know. But I do know, that sooner or later Mackenzie King will bring that bunny out of his trick topper, and that will be that.

So then, this business of a prices probe committee means nothing. It is merely a piece of misdirection. It gets you looking at what Hon. Paul Martin and his committee is doing, with obligato by Ralph Maybank, Winnipeg's own vice-chairman. The creation of this committee takes a lot of the heat away from parliament. Instead of miles and miles of words and billions and billions of cubic feet of hot air let loose in Canada, about prices, about the high cost of living, and all the rest of it, there will be as little of this kind of stuff as possible.

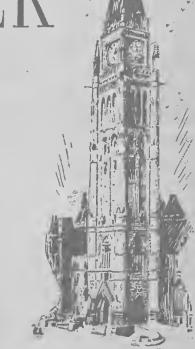
In the meantime, the committee will hear facts and facts and facts. There will be briefs, there will be submissions, there will be tables, there will be oratory, there will be everything that a parliamentary committee will bring.

But meanwhile, mark you, people will get tired of hearing about prices. When parliament convened, the high cost of living was really hot. But it may not be that way in June. Remember housing! For months and months, people heard about housing, talked about housing. But have you noticed that housing no longer makes the front page? Why? Mainly, because people are tired of everlastingly hearing about it.

YET you cannot say that housing has been solved. People have recognized that while the government could do a lot, they could not do everything. People still need houses, and need them desperately. But they have realized that it is beyond any government's capacity repeat, any government's capacity— to build enough houses. You have the two extremes. You have the rich Americans, with seemingly inexhaustible resources, and they are worse off for houses than we are. On the other hand, you have the Russians, where families even double up in single rooms, and where when a family gets a room all by itself, it can boast that it has come up in the world. No, housing cannot all be blamed on the government. The high cost of everything has finally left us at a point where we can most frequently inquire about the high cost of nothing, for that is what we are buying mostly, these days. Or, if you will, the grocery bill has stolen our new house from us. But in any case, housing is definitely not the news it was a year ago. And definitely, it has not

been solved either.

Ditto prices. The truth is that no government can solve prices. As well blame Hon. Thomas Douglas for a bad storm that develops in western Saskatchewan as blame the Ottawa government for the high cost of living. Because the C.C.F. premier is as helpless as anybody else to pass a law and stop a dust storm.



There are those who talk about rolling back prices say, 10 per cent. All right, where does that take us to? Ultimately it takes us right into our own barnyard. We find out that we are not eager to cut our own revenue 10 per cent, because we feel we are making little enough now. Does it not really mean that we want to have our present revenue, but that we want the other fellow to cut his prices? Boiled down, that is the way it seems.

FIRST of all, we cannot ask farmers to cut their prices; they can use all the money they get. Then a city man, buying raw products, has to pay the price asked him, and he cannot cut wages in the face of higher grocery bills his workers pay. So we have the vicious spiral of inflation, the cat always chasing its own tail, going round and round, getting nowhere.

Again, we have to buy much from United States. We have to pay their prices. They, not we, set prices. A man buying gasoline therefore has to pay what the Americans want, or drive a horse.

Again, when prices finally fall, they will fall on a world scale, in general, and on an American scale, in particular. Therefore, Canadians cannot lower the cost of living by passing a law, or holding a price probe hearing.

King knows that. That is why he is willing to let this committee try to solve the insoluble. To reduce prices through a parliamentary committee is strictly in the tradition of baling water out of the horse trough with a sieve, Prices will break in the States—indeed in many particulars have already done so—and will come down still more. When they get back near normal, our prices will fall in sympathy.

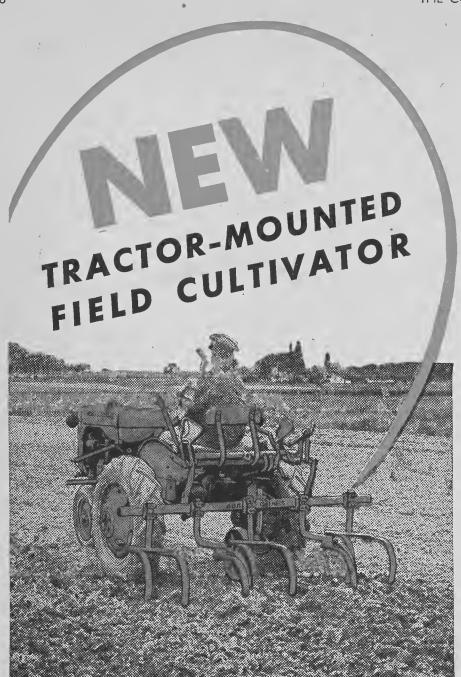
A European harvest will help a lot. Meanwhile, Poland is selling coal to Sweden. A few European countries are beginning to export. That means the world is beginning to get going again. Above all, Britain is starting to ship things in bigger quantity. What does this all mean? It means that the inflationary period is nearing an end. When you have nine pounds of butter and eleven custom-

ers, you have inflation. When you have eleven pounds of butter and nine customers, you have depression. The trick is to get things back to ten customers and ten pounds. When we do that, we shall need no parliamentary committee.

Turn to page 100

More

The opinions expressed Under the Peace Tower are those of our correspondent and not necessarily those of The Country Guide.



Here's one of the handiest tillage tools ever built for general field work. Ideal for weeding, summer tilling, quack grass eradication, clover and alfalfa renovation. Adjustable working depth enables it to do the work of a deep-penetrating field cultivator, shallow-



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B.C. Ponders Its Jap Problem

Racial discrimination against Japanese will be one of main topics during the coming session of the House

By CHAS. L. SHAW

Columbia were to reverse, or at least drastically modify, her attitude towards Japanese when the provincial legislature gets down to business this spring.

Up till now British Columbia is the only section of the North American continent that denies Japanese the right to move about as they please from one community to another. The restrictions at present imposed on Japanese in this connection are now less severe than they were during the war period.

The anomaly and unfairness of this situation have been making a deep impression on many British Columbians in recent months, and while there is still deep-seated opposition to the idea of giving Japanese full freedom to operate in the province as they did before Pearl Harbor, it is obvious that a more moderate viewpoint is gaining in influence.

While there has been considerable criticism of the "hard" policy of British Columbia towards Japanese and talk of probable measures to soften it, the issue was really touched off in spectacular fashion when it was announced that, in compliance with provincial law, all Japanese employed in interior British Columbia timber camps would be summarily fired. Immediately there was popular outcry; protests were sent to the government, and the latter hastily backed down from its former position, ordering that the law be given a hoist until such time as the legislature could discuss the whole question and make up its mind on a permanent policy towards the Japanese.

The provincial law forbidding the employment of Asiatics in interior logging camps operating in Crown timberlands was passed long ago-back in 1901, actually, because the principle of having aliens exploit the country's natural resources was considered a dangerous one. However, this law never worked much of a hardship on the Japanese because they were never much interested in working in the woods. They were far more attracted to the coastal region, where more than 90 per cent of them congregated before the war, most of them being engaged in fishing, truck farming or various other pursuits close to tidewater.

However, when the war broke out in the Pacific and all Japanese were evacuated from the coast and placed in internment camps or relocation areas in the interior, the Canadian government decided as a war measure, , to override the provincial statute and permit the Japanese to work in woods camps, as this was one of the most logical means of employment for those who remained west of the Rockies.

About 700 Japanese obtained such jobs and everyone was seemingly happy until a few weeks ago when the wartime powers were linquished and the Japanese became automatically affected by the old provincial law.

JUST what the temper of the legislature is on this subject will not be disclosed until it actually debates the subject, but it is pretty certain that the Japanese issue in the House this year will concern more than the rights of 700 Japanese to work in the woods; it will probably bring up the whole question of racial discrimination and introduce the matter of the electoral franchise from which Japanese are at present denied, although Chinese and

T would not be surprising if British East Indians were last year given this privilege for the first time. Also involved is the restriction imposed on the movements of Japanese in British Columbia.

Groups regarded as liberal, not necessarily in the political party sense, have been working for a removal of present discrimination, in line with what has happened in the western states, where the Japanese problem has always been similar to British Columbia's although the Japanese have been granted the same freedom as they exercised before the war.

Another contentious piece of legislative business is the proposed set of amendments to the provincial government's industrial disputes legislation. A year ago the legislature enacted this measure as a means of curbing union leaders, but organized labor has been fighting it and has apparently convinced several members of the House that certain features should be withdrawn. The year 1948 was happily free, in a relative sense, from labor troubles -in sharp contrast with the previous year-but the horizon has been somewhat obscured recently by announcement of the powerful woodworking and mine unions that they will be asking for higher wages again, come spring.

The industrial situation is complicated by the fact that while the past year was a prosperous one for almost everyone, the uncertain economic picture today, resulting from the United Kingdom's reduced buying, Canada's own austerity program, and other factors, makes it difficult to predict how the province's major industries will fare during the coming months. For that reason, industries will hesitate to commit themselves to a schedule of higher wages inasmuch as they have no way of telling how long the period of profitable operation will last.

ONE big industrial operation, that of the H. R. MacMillan Export Co., has tried to answer the riddle intelligently in its own way by making full use of its somewhat swollen 1947 profits through expansion. The company made a net profit of \$7,120,000 last year; much of this will be invested at once in a new pulp mill to provide additional employment. In other words, it is not going to be vulnerable to criticism from the labor front on the ground that it is hoarding its profits and should instead increase wages all around. \

Other industries are troubled by government controls. For instance, the oil distributors have been asking for increased gasoline prices, and the provincial petroleum board has not fully acceded to their requests. As a result, the companies have taken the arbitrary position of rationing their supplies to consumers on the ground that they cannot afford to do otherwise. This may, in turn, lead to similar arbitrary action by the government.

Agriculturally, this is the "off" season on the west coast, but it is a period for reflection on past mistakes and for planning the program for the coming season. Indications are that the fruit crop of the Okanagan will be an exceptionally large one, but there is also abundance of evidence that the markets will be more competitive than they have been for several years. The major problem this year will be not only to develop and maintain the highest quality of product but to practice alert and aggressive salesmanship.

News of Agriculture



A Yeoman Warden (known as "Beef-eaters") of the Tower of London explains matters of interest to visiting Canadian plowing champions Glen McFaddin (left), Alfred Brunton, Russell B. Hare, W. L. Clark (coach-manager) and John Capton, Jr.

Champion Canadian Plowmen Visit Britain

They visit England, Scotland and Ireland, participate in plowing matches and see notable British farms

FOUR Canadian plowmen, all champions, and each one the winner at the International Plowing Match held in Ontario each fall by the Ontario Plowman's Association, enjoyed a noteworthy trip to Britain in January and February along with their manager, W. L. Clark, Scarboro, president of the Association.

The champion plowmen are: Gold, Medalist Alfred Brunton, Tara, Ontario, married, 160-acre farmer, also gold and silver medal festival baritone singer, frequently a winning plowman who has been plowing since he was 14; G. A. McFaddin, Millbank, Ontario, tractor gold medalist, fond of machinery, 38 years old, and 250-acre farmer with 60 head of cattle; John Capton, Jr., 20 years old and the youngest of the group, a third generation Cayuga Indian plowman, coached by his uncle John Capton, Sr., a former provincial champion, and has been plowing since the age of 13, vice-president of the Six Nations Young People's Recreation Club, and has had a three-year industrial course at the Brantford Collegiate Institute; Russell B. Hare, tractor silver medalist plowman, prize winner at matches since 1928, 155-acre farmer and

breeder of purebred Holsteins at Jarvis, Ontario, 43 years of age.

Coach-manager Clark, 57 years of age, has been farming all his life. The trip, and the championship classes were sponsored jointly by the Salada Tea Company and the Imperial Oil Company, Limited.

The group sailed aboard the Queen Mary, did sightseeing in London, visited the King's farm at Windsor, Cambridge University (founded in 1440 by Henry VI), took part in the Empire Plowing Match at Workington, in which John Capton, though using strange horses and equipment and unaccustomed to British methods, came second in the general purpose horse plowing match.

A week was spent in Scotland where, in addition to sightseeing which included Loch Lomond, Edinburgh Castle, Burns' Cottage and Wallace's Monument, the group visited a large co-operative farm at St. Cuthbert, saw the Reserve Champion Angus bull sold at the Perth Aberdeen-Angus sale for \$29,-820, and visited a number of important Scotlish farms. Later the group visited Ireland and attended the international plowing match held in County Down, Northern Ireland.

Australian Wheat Agreement Controversy

Australian wheat growers protest low British contract prices at grower's expense

A CCORDING to "Agriculture Abroad" published by the Economics Division, Dominion Department of Agriculture, Ottawa, "considerable controversy has arisen regarding both the methods of negotiation and the prices agreed upon" in connection with the recent British-Australian wheat agreement. A spokesman for the Australian Wheat Growers' Federation is reported as having protested that the negotiations for the disposal of wheat to Britain "were taken out of the hands of the Australian Wheat Board, depriving it of its delegated powers to carry out the function for which it was appointed-to serve and safeguard the interests of the grower."

The Australian Minister for Commerce and Agriculture said that the Australian Wheat Board did not favor an over-all price for a 12-month contract, but preferred a quarterly contract with price adjustments; and that after the British government had ap-

proached the Federal government of Australia, the contract was completed for an over-all price. Originally, negotiations between the British Ministry of Food and the Australian Wheat Board were on the basis of 18/6 a bushel. The Wheat Board was prepared to recommend a concession of a shilling a bushel on wheat for the United Kingdom, but not for the colonies and other areas. The Commonwealth government took into consideration the magnitude of the deal and also the fact that the British government would provide the necessary shipping, and therefore accepted the maximum offer made by the British government.

An official of the Farmers' and Settlers' Association of New South Wales believes that the United Kingdom contract represents a gift from Australian wheat growers of £10,000,000 (Australian \$3.22) to the people of the United Kingdom, and asserted that in fairness to the farmers the difference of 2/6 per bushel

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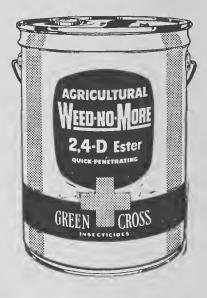
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between the contract price and the export selling price should be paid to farmers out of general taxation. The same view is taken by the president of the Australian Wheat Growers' Federation, who, in an open letter to the Minister for Commerce and Agriculture, urged that the loss should be borne by the people as a whole.

Australia's contract with Britain is for 80 million bushels, at a price of approximately \$2.74 per bushel, f.o.b. Australian ports. There is also a contract with India for 25 million bushels, at approximately \$2.96 per bushel. Should the Australian Wheat Board receive more than 210 million bushels from the 1947-48 harvest, each country will receive a further five million bushels. Australia has also undertaken to deliver approximately 55 'million bushels of wheat to France over a period of five years, including 10.3 million bushels of the 1947-48 crop. The price to France is to be based on the cost of American wheat delivered in French

1947 Holstein-Friesian Progress

DUREBRED Holstein-Friesian cattle in Canada set five world records and seven Canadian records for milk and butterfat production in 1947. Three breeders received Master Breeder shields, the highest honor the Association can award. Registration and membership each reached a new high, and 22,045 head were exported during the year to 17 different countries. Also, 25 per cent more animals were classified in selective registration than in 1946, and included 21,444 head, or 44 per cent of the number registered.

Registrations reached 55,100 and memberships 10,450. During the year, the world record for yearly butterfat production on twice-a-day milking for all ages and breeds was made by O. H. H. Abbekerk Darkness, with 1,139 pounds fat from 25,711 pounds milk. Another twice-a-day milking butterfat record was made by Supreme Ruby Echo, also owned in Ontario, that established a new world Holstein record for lifetime production, with 201,392 pounds milk containing 6,966 pounds fat. In the mature, 365-day division, three-times-a-day milking, eight other 1,000-pound fat records were made during the year, the lowest of these, 1,016 pounds fat, and the highest 1,259

The three Master Breeder shields were awarded to J. T. Tully, Peterboro, Ontario; W. C. Good, Brantford, Ontario, and George W. Muir, Dominion Animal Husbandman, on behalf of the Central Experimental Farm, Ottawa.

A recent announcement from the Association reports that Canadian Holsteins have won eight of the 15 All-American awards, in addition to two reserves. Both Grand Champions at the Royal Winter Fair, 1947, have won All-American awards, these the aged cow Glenvue Noelle Inka, bred by D. S. Duncan, Brampton, Ontario, and the aged bull Montvic Rag Apple Marksman, owned by J. J. E. McCague, Alliston, and C. J. Cerswell, Beeton, Ontario. Two Alberta Holsteins earlier named all-Canadian in their respective classes, have now received All-American awards. The All-American junior yearling heifer for Picard and Clark, Acme, Alberta, is Swalwell Texal Bess, that was junior champion at the Royal last fall. The All-American senior yearling heifer first prize winner at the Royal is Highcrest Pippin Rag Apple, for R. C. Briggs, South Edmonton, Alberta.

Clydesdale Stallion for Saskatoon

CINCE the days of the late Dean Rutherford of the University of Saskatchewan, that institution has been noted for its good stable of Clydesdale horses. Though horses are less numerous in Saskatchewan than in past years, the good breeding of the

Clydesdales at Saskatoon is evidently to be maintained. The Saskatchewan Department of Agriculture has co-operated with the University to purchase the imported Clydesdale stallion Winslaw Proprietor (23940), foaled March 20, 1941, bred by Robert Pollock, Loganswell, Newton Mearns, Renfrewshire, Scotland, and purchased by the University from the estate of the late R. Ray McLaughlin, Oshawa, Ontario.

Imported to Canada in August, 1944, Winslaw Proprietor is a dark blue roan. He is a great-great-grandson of Kismet, on his sire's side, and is out of Loganswell Bell, a granddaughter of Hugo's Footprint. He is described by T. P. Devlin, secretary of the Clydesdale Horse Association of Canada, as "a beautiful specimen of the breed, having an abundance of Clydesdale character, with a massive deep body; and, standing on the best of feet and legs, he moves to perfection." He was Grand Champion at the 1946 Toronto Royal, and Senior and Reserve Grand Champion in 1947. He also sired five prize winners shown at the two shows.

South Africa Exports Food to Britain AST fall the Union of South Africa lent Britain £80 million worth of gold. In return, it was agreed that the United Kingdom will import food from South Africa during the three-year period 1948-1950, to the value of £12 million sterling. The British Ministry of Food indicates that £6.2 million will be spent on fresh fruit, £4.4 million on processed and dried fruits, including wines and spirits, while the remainder will pay for canned fish, eggs, and potatoes.

During the 1947-1948 season, the British Ministry of Food will buy 50,000 cases of 30 dozen eggs each, at a price of 2.3 shillings per dozen for first grade large eggs at South African ports. To supply this contract, the Directorate of Food Supplies and Distribution in South Africa purchases only first grade large eggs from producers and pays 35 cents per dozen.

U.S. Farm Price Policy

SOME United States farm organizations and others that have been studying United States farm problems have reported their conclusions recently. These various groups and organizations have been independently studying the same general question, and have reached conclusions which frequently are in sharp variance with each other.

The National Grange at its last annual convention believed that all State and Federal agricultural programs operating within a county should be coordinated by the election of county committees consisting of at least five members. They favored price protection for farmers in order to insure consumers of an abundance of food. The parity formula should be modernized to include farm labor as part of production costs; international trade should be expanded so as not to cause injury to American business, labor or agriculture; farmers should be given equal bargaining power by means of co-operative marketing and purchasing associations, as well as a multiple price system and some method of adjusting production to consumer demand; and government price supports should be established at a level which would protect farmers against loss and still allow prices to influence the relative production of various farm commodities.

The American Farm Bureau Federation at its last convention favored the European Recovery Program and supported the principles of reciprocal trade agreements. With respect to farm prices, the Bureau favored a program "based upon mandatory variable price supports for agricultural commodities," to be applicable with or without quotas. Support levels should vary from 60 to 90 per cent of parity, depending on the importance of the commodity and its supply and price provision. The Bureau

parity principle."

The committee on agricultural policy of the National Planning Association was represented before the Congressional Committee on Agriculture by Dr. T. W. Schultz, head of the Department of Economics, University of Chicago. On the question of price supports for farm products, this brief said in part:

"Price supports after 1948 should be related to a modernized parity. They should be announced sufficiently far ahead to permit farmers to adjust their production plans accordingly. When the supply of a given farm product is low relative to demand, the support price should be a high percentage of, or even greater than, parity, and when the supply of a given farm product is large relative to the demand, the support price should be a low percentage of parity."

Marshall Plan Would Help Canada VIRTUALLY, the entire western world awaits the decision of the United States Congress on the European Re-

States Congress on the European Recovery Program, commonly known at the Marshall Plan. This Plan as presented to Congress by President Truman, calls for an appropriation of \$17 billion over a four-year period, either in the form of loans or grants to 16 European countries co-operating, or to any others who can qualify on a similar basis.

Approximately \$6.8 billion was required for the first 15 months, beginning April 1, and of this amount, substantial quantities were scheduled for purchase from Canada and other North and South American countries. The purpose of these outside purchases was to relieve the strain on the American economy, and the total quantities scheduled for such purchases between April. 1948, and June, 1952, included such items as bread grains, feed grains, fats and oils, oil cake and meal, sugar, meat, dairy products, eggs, other foods, fertilizers and agricultural machinery. Of these the four largest items in point of value are bread grains, coarse grains, meats and miscellaneous foods.

Sales of Fertilizers, 1946-1947

FOR the year ending June, 1947, 657,-282 tons of commercial fertilizers were sold in Canada, close to four times as much as was sold 20 years ago, when 169,564 tons were sold in 1927.

More than 85 per cent of all fertilizers are in the form of individual fertilizer materials, and of these ammonium phosphate 11-48-0 amounted to 40,252 tons. Next came superphosphate with 27,232 tons.

The most popular mixed fertilizer was the 2-12-6 mixture of which 176,647 tons were sold, principally in Ontario and Quebec. Next came a 4-8-10 mixture totalling 164,896 tons.

Less mixed fertilizers are used in the prairie provinces than in any other part of Canada.

The prairie provinces are, however, the largest users of individual fertilizer materials. The most important is ammonium phosphate 11-48-0, of which the prairies used 34,959 tons, which is more than any other province used of all fertilizer materials combined.

Australia Has Much Livestock

ONE of the reasons why Britain has been discussing long-term food agreements with Australia is that Australia, in addition to being one of the world's important wheat exporting countries, also has a large livestock population. Much of the interior of the Commonwealth is very dry, arid country, but there are, nevertheless, millions of acres of grass land on which sheep and cattle can be grazed cheaply. Turning grass and other inedible plants

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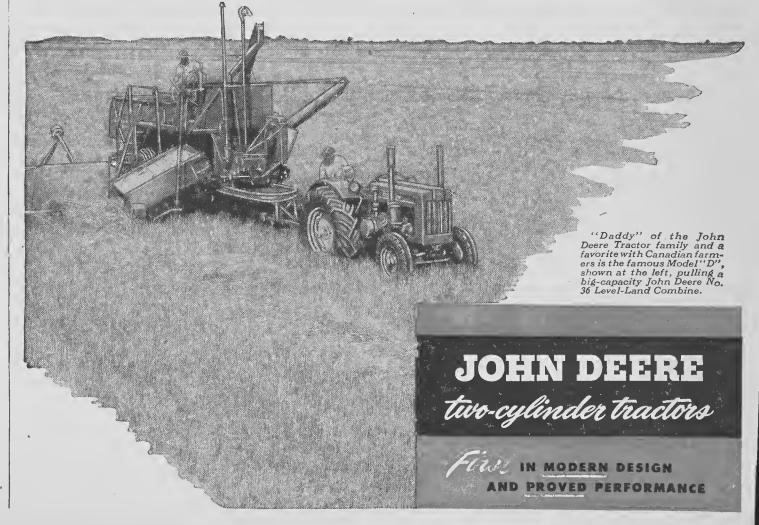
"Time Outs" for service are few and far between and much less costly when you own a John Deere. It's a tractor unequalled in simplicity—with fewer parts to wear, cause trouble, and require eventual replacement . . . fewer adjustments to make . . : greater accessibility. It's a

more rugged tractor, too, with big, heavy parts that will stand up and give you years of trouble-free service.

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In addition to these basic, two-cylinder advantages, you'll find today's John Deere Tractors outstanding in *modern* design—with every feature to make your farming easier .:: faster ::: more profitable.

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great needs. As of March, 1947, the last official figures, Australia had 3,013,000 dairy cows and 10,414,000 other cattle. Last year, the State of Queensland produced more than 102,000 tons of beef worth approximately \$17,600,000. Of this, 88,000 tons, or more than double the 1946 figure, was exported. Queensland in fact, provides about 85 per cent of Australia's export beef. In all, about 600,000 head of cattle went through Queensland packing plants, or "meatworks." In addition to the export of carcass beef, Australia in 1946-47 exported 118,835,000 pounds of tinned meat of all kinds, most of which went to Britain; and in order to encourage exports to Britain, Australian consumers are rationed.

The Australian Meat Board, one of several government-appointed boards to handle exported farm products, conducts or finances experimental work to increase production efficiency for the British market. At present a three-year experiment in finishing beef cattle on grain sorghum is under way in New South Wales. Experiments with other feeding stuffs are under discussion; and to increase the quantity of breeding stock, especially of dairy cattle, the board is assisting with tests in the raising of dairy heifers without whole milk or skim milk.

In 1942, Australia's sheep population reached a peak of 125 million animals. In 1947, this figure had dropped to 95,723,000 as a result of a number of very dry and unsatisfactory seasons, resulting in the decline of sheep numbers in all Australian states except Western Australia.

Some Australian sheep ranches or "stations" are very large, running into many thousands of acres. One station owner recently bought a small aeroplane, capable of landing at 22 miles per hour, in order to patrol his fences, and also for use in gathering or "mustering" the sheep. He believes he can do, in a few hours, work which would take a man on horseback perhaps two weeks. The luggage compartment of the plane will be adapted to carrying sheep and he will be able to drop down beside a broken fence or a sick sheep, do what is necessary and get away again quickly.

Australia has approximately 300,000 working sheep dogs, most of which are Kelties, short-haired dogs able to stand up to the hot work. The origin of the Kelty is somewhat uncertain. One story has it that it is descended from a cross between Australia's Dingo or wild dog, the only meat-eating animal indigenous to Australia. Another story is that the Kelty has descended from a bitch named Kelt, and a dog named Rufus brought to Australia in 1825. These were a cross between a fox and a black, smooth-coated collie, originally bred for poaching in Britain, by a gypsy.

An Australian lambing record is said to have been made last year by a half-bred Leicester ewe in Tasmania, the island state in Australia. This ewe produced five lambs in less than seven months—twins on April 16 and triplets in November. She had taken care of all five.

Australian wool met a seller's market in 1947, market conditions being the best in the long history of the trade, with demand strong from the United States, European, Yorkshire and domestic mills. The Australian record price for the season was established in January at \$1.68 per pound, paid by an American buyer for five bales of greasy Merino fleece.

Australian pigs declined in numbers along with other livestock in recent years. A year ago, the pig population was 1,273,000. Horses have declined over a long period, to 1,195,000.



Is your farm of a size that calls for a one to two-plow tractor? Or do you use the smaller tractor as a *second* one to give you economy on jobs not needing a lot of power?

In either case, stop and think about quality for a moment. A tractor of the one to two-plow size, such as the Oliver 60, becomes the main dependence of the one-tractor farmer. It is often asked to do, and does do, jobs which rightfully belong to its bigger brothers. On multiple tractor farms, the 60, because it is so handy, is often overworked.

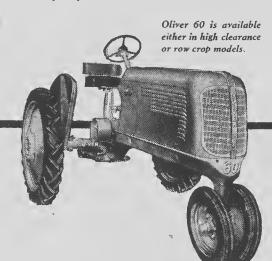
These are the reasons why we take such special care in designing and building the Oliver 60. We guard its quality particularly, because we know a small tractor is abused more than a big one. The farmer who buys a small tractor needs quality even more.

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- Ample platform room





OLIVER

SFINEST IN FARM MACHINERY'S

Trans-Pacific Mating

Artificial insemination which began in the United States and ended in Australia successfully carried out

By CHAS, F. COLLISSON

EVEN lively, healthy Jersey calves, born in July, on as many farms in far-off Australia, attest with certainty the value and success of modern, long-distance breeding process called "artificial insemination."

These two young bulls and five heifers are offspring of purebred Jersey dams, inseminated last October at long distance, 16,000 miles in fact, with sperm from a famous, imported, Jersey herd sire, Regal Heritage, of Hilltop farm, at Erwinna, Pennsylvania.

They further prove one world-record fact, of immense importance to dairy men everywhere . . . that any cow, on any farm reached by airplane, anywhere in the world, can be bred successfully, at long distance, to any bull in any other part of the world.

That is, if experienced operators, familiar with the new technique, are on the job at both ends of the line, for

such skill is necessary, yet not difficult to acquire.

Bull sperm can be kept potent for ten days, shipped by plane overseas. more than half way around the world. In this project it proved effective after a five-day trip from Pennsylvania to New South Wales and Victoria.

Thus the world's richest breeding services can be made available to farmers' co-operative breeding groups, to remote herds anywhere, or to those too

small to maintain a purebrea sire alone. This project united the skill and efforts of the bull's owner, Thomas Erwin, New York advertising man; Professor E. J. Perry, pioneer developer of the new method at Rutgers University; Dr. D. C. Reid, manager of the New Jersey Co-operative Breeding Association; with those of Dr. D. S. Wishart, veterinary officer of the Victoria Department of Agriculture, and the owners of the dams, Jersey breeders in Victoria and New South Wales.

Two insulated, canvas ice cream shippers carried the sperm by private plane from Hilltop farm to La Guardia airport, New York City; thence to Sydney, New South Wales, by a British Overseas Airways Corporation plane via London and Cairo, Egypt.

One package contained a pint-size thermos bottle packed inside a doublewall, tin container filled with frozen brine. The other carried a special type of thermos, using a gas refrigerant, developed for shipping sperm by the American Institute of Scientific Breeding.

In each bottle, also iced, was a sealed vial of sperm, somewhat diluted, to keep it potent, with a buffer solution of egg yolk and phosphate salts. Although the temperature of both rose from the desired 42 or 45 degrees to 56 degrees on arrival October 9, it proved "alive and kicking."

Tested under microscope in the government's Glenfield Insemination Station in Sydney, more than '10 per cent of the spermatazoa were active. There



The American father, Regal Heritage.

it was further diluted to increase its volume to 16 tubes.

"In view of its age of about seven days," declared Dr. Wishart, "this was very satisfactory. On October 10, 15 cows in oestrus were inseminated, while the remaining dose, used next day, showed 60 per cent progressive motion."

His own enthusiasm kept him up all night awaiting the Victoria shipment from Sydney, arriving at Laverton airport at nine o'clock in the morning. At

top speed he and his assistants motored 380 miles to inseminate cows on the farms, some quite remote, between noon and nine o'clock in the evening.

Seven calves dropped in July are the tangible results. First calf born was Mr. Parkes' young bull, Irona Par Avion, out of Irona Soeurette's Ida. Dr. Doyle, one of the cow owners, asked permission to name his calf "Wishart's Erwinna, in honor of the two men who

made all this possible." Says Mr. Erwin: "This is probably as close to immortality as I shall ever come."

Airmen and veterinarians were important

Regal Heritage, nine years old, is the only Jersey sire to win three times, before 18 months old, the coveted honor "First over the Island of Jersey," defeating outstanding show bulls of all ages. He will be given the "Superior Sire" rating soon. This requires a minimum average production by his daughters of not less than 450 pounds of fat in 305 days, two-time milking.

This then is the rich breeding now made available to breeders 16,000 miles away, more than half way around the



An Australian mother and her calf.

Exhibition Grounds Regina, Sask. MARCH 31, APRIL 1 and 2, 1948

Saskatchewan Cattle Breeders' Association ANNUAL SALE

of Pure Bred Bulls

HEREFORDS

SHORTHORNS 120 Bulls SALE

The order of the Sale will be as follows: HerefordsApril 1— 9:00 a.m.Aberdeen-AngusApril 2— 9:00 a.m.ShorthornsApril 2—10:30 a.m.

All animals entered in the Sale will be tested for Bovine Tuberculosis and Bang's Disease. All undesirable animals will be culled and sent for slaughter.

The Saskatchewan Swine Breeders' Association

will hold a sale of registered Bred Sows on Wednesday, March 31, at 11:00 a.m., In the Sheep and Swine Barn. Catalogs can be obtained from:

A. HALL, Secretary Department of Agriculture Saskatchewan Catalogs can be obtained from: C. E. BEVERIDGE, Secretary, Department of Agriculture Saskatchewan Regina

J. A. BASKIE, President Whitewood, Sask. JOHN BRANDT, Vice-President Edenwold, Sask.



Yep! Yau and I and Alax. We all hove an interest in each other; and this year we'll go a long way together. But it's really the high oil content and perfect bolance af minerals and vegetoble proteins in Alox that keeps me looking like a Champion, Boss! ond you'll hove to odmit it. To continue to get-top prices they say we need Alox Oil Coke Meal every doy till market time!



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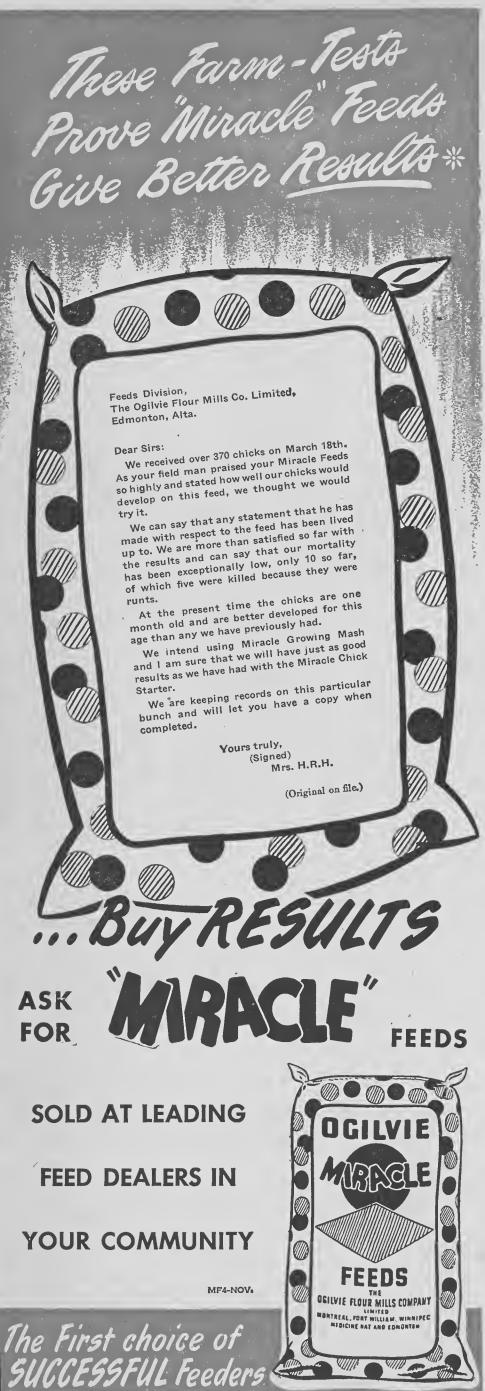
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LIVESTOCK



Guide photo.

Calf club auctions are a favorite method of marketing beef club calves. Here is where good care and feeding really pay.

Feeding Wheat to Pigs

Suitably supplemented wheat is a better feed in some ways than oats or barley

CANADIAN farmers have been placed in a very difficult position this year in many instances because of changing levels of feed prices and scarcity in some areas. Some districts, too, have had considerable quantities of low grade wheat and have perhaps not realized that this wheat can be used to good advantage in feeding livestock, especially hops

According to the University of Alberta, wheat is a desirable feed for pigs and actually possesses some advantages over oats and barley. In practice, the University has found that 100 pounds of wheat will replace 106 pounds of barley or 115 pounds of oats between weaning age and marketing, provided good quality grain is used and is suitably supplemented and balanced with protein or mineral supplements.

Wheat is low in fibre and is a reasonably good source of protein, besides which it contains a number of the essential vitamins. It is high in starch, and is therefore a fattening feed. Its disadvantages are that it is low in calcium (lime), lacks sufficient protein for young growing animals, and does not possess enough of Vitamin A for growth, or of Vitamin D to prevent crippling.

The Alberta experience has been that the three higher grades of wheat show very little difference in feeding values. Lower grades are slightly less valuable as the grade decreases, but the chief differences in feeding value seem to be based fairly closely on the weight per measured bushel. It has been found that recleaned wheat screenings and lower grades of feed wheat can be fed to give satisfactory results, if mixed with better quality grain.

Wheat should not be ground fine for pig feeding. It tends to get gummy and is not digested as easily. Medium to coarse grinding is best. When properly fed, wheat does not have any injurious effects on carcass quality of pigs, even when fed from before weaning until marketing age. Beginning with one part of wheat and two parts of oats (hulls removed), the amount of wheat can be increased gradually, especially if the regular feed grains are scarce, to half oats and half wheat, taking care to sift the hulls from the oats.

Young pigs need much more protein than older pigs, and should be given two to three pounds of skim milk for every pound of grain, as well as a pound of ground limestone and half a pound of salt for each hundred pounds of grain. If the skim milk is not available, 10 per cent of tankage with the grain, or 12 per cent of mixed supplements, will supply the necessary additional proteins. During the winter months, if it is necessary to feed the pigs inside, they should get a table-spoonful of cod liver oil or good quality pilchard oil daily, till they weigh about 100 pounds.

After this weight is reached, wheat may be increased gradually, until three parts of ground wheat (by weight) to one part of ground oats are fed, and wheat alone, if necessary, during the last month before finishing, though this is not desirable. It is important to remember that though the amount of protein can be reduced by perhaps one-half after the pig reaches a weight of 120 pounds, the full amount of mineral supplement is necessary. In all mixtures containing wheat, it is important to use parts by weight rather than parts by measure.

Mastitis Control Stepped Up

RARLY last fall the Alberta Department of Agriculture stepped up its program for the control of mastitis. This disease is causing dairymen more concern than any other single ailment. It is common to all countries where milk is produced, and the monetary loss due to it is very difficult to compute. It is, however, an extremely costly disease.

Two years ago, the Alberta government set up laboratory facilities for the purpose of analyzing milk samples from herds in the Edmonton area. Last year this service was extended to all areas in the province where there is specialization in milk production. The sampling was done by a qualified veterinarian, and treatment recommended on the basis of tests made in the laboratory.

Owing to some feeling that the cost of treatment was too high, many herd owners did not take advantage of this service. As a result, the Dairy Branch of the Alberta Department suggested to milk shippers in the Edmonton milk shed two plans by which veterinarians would be able to reduce their fees, provided the volume of work was large enough and collection of the fees assured. One plan covers a minimum of 100 herds to be handled by one veterinarian on a half-time basis, and the other plan covers groups of less than



The department of the engine plant where Plymouth engines are given their initial "run" before being Dynamometer-tested for brake horsepower and general operating efficiency.

PLYMOUTHS are built in Canada by Chrysler! In huge, modern plants, skilled Canadian craftsmen and powerful machines work miracles of production. If you could walk down the long production lines, you'd see the extreme care that goes into every Plymouth. Every operation is a fine example of precision manufacturing. There is no lost motion and nowhere is precision sacrificed for speed. Rigid engineering standards and specifications are strictly adhered to. Skilled technicians constantly check production to assure unvarying quality. The specially designed instruments and gauges used for checking are marvels of ingenuity and accuracy. On the long assembly line the big Plymouths rapidly take form until, after complete assembly and a final thorough inspection, they roll out of the busy plant, gleaming and handsome—fine Canadian-built Plymouths, ready to give top performance, greater safety and increased economy to their owners.

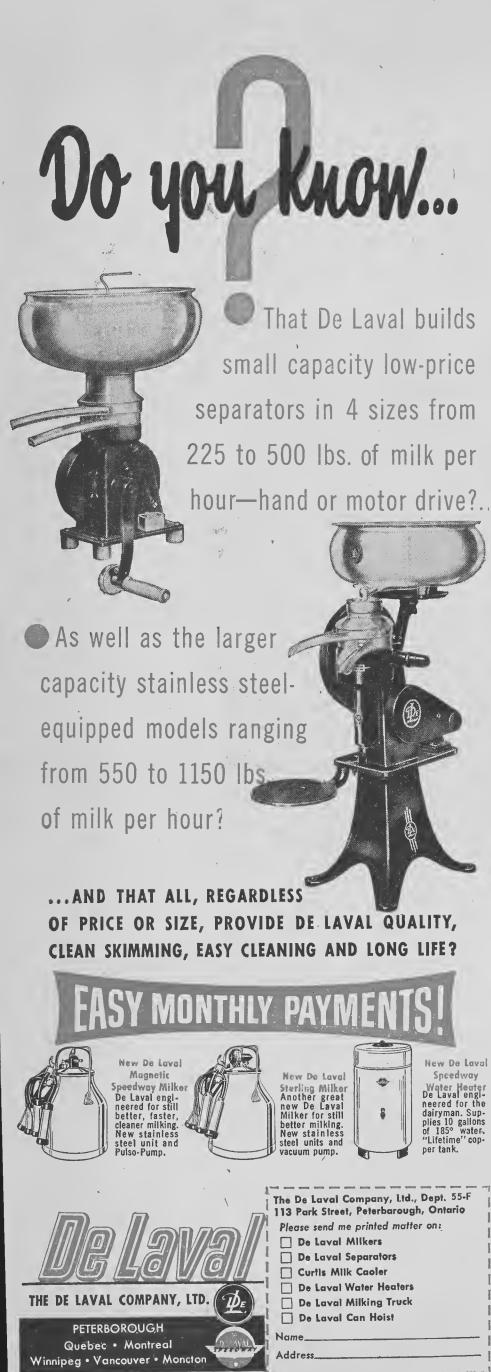
LOOK AT THESE PLYMOUTH FEATURES

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In this modern plant, skilled craftsmen build the extra values you get in Plymouth. Superfinished crankshaft and camshaft journals—heat-resisting exhaust valve seat inserts—lightweight aluminum pistons—full-pressure lubrication and full length water jackets are only a few of the Engineering advancements that make Plymouth a long lasting, economical car to own and operate.

BUILT IN CANADA . . . BY CHRYSLER



100 herds at a somewhat higher cost. In the second plan, the herd owner has his choice of a veterinarian. The department warned producers that these services could not be undertaken unless they were supported by herd owners, and made it plain that "if interest is lacking, the cost to the individual will be many times higher than that for which services can be offered under this arrangement"

This is a number one dairy problem, and ranks along with the weighing and testing of milk, and the use of purebred sires, for profit saving.

Poor Tattooing Causes Trouble

PACKERS complain frequently that an unnecessarily large number of hogs reaching the market are poorly tattooed. They point out that in the past seven years, during which all market hogs have been paid for on the basis of hot-dressed weight, and government grades, a system of tattooing has been in effect by which hogs belonging to an individual producer can be readily identified if the tattooing has been properly done.

Sometimes, however, due to a defective tattoo machine, or the lack of adequate ink in the machine, or carelessness in the use of the machine, the imprints on the hogs are indistinct. Under such circumstances, it is almost impossible to make prompt and accurate settlement after the hogs are slaughtered.

There are several causes for poor tattooing, one of which is poor ink, which may either result from the use of the wrong kind of ink, or lack of sufficient quantity. The machine should be brushed with ink after each hog is marked. In winter, also, the ink is likely to congeal unless kept in a fully liquid state. Congealed ink will not mark properly. The needles of the machine should be sharp and the tips straight. Dull needles do not carry enough ink. Sometimes the characters (letters or figures) become broken and are not replaced. This makes for indistinct or distorted tattooing. Characters are sometimes inserted in the machine upside down, so that a six will read as a nine, or a five as a two. The outside characters in a machine may be dropped, or not properly in place, and often these are a key to identification. The proper place for tattooing is about six inches from the backbone on the cushion of meat behind the shoulder, and all hogs should be tattooed on this portion of the carcass. Tattoos elsewhere almost always cause trouble. Sometimes tattoos are applied upside down. This can be avoided by standing behind the hog and keeping the handle of the machine parallel with the length of the hog. Occasionally the tattoo symbols are not changed when one lot is finished and another begun. Consequently, some hogs carry two tattoos. In such cases, the wrong tattoo should be defaced by striking it with the proper number so as to blur it, and again twice more with the correct tattoo within a few inches of the original mark. Finally, the tattooer should always tattoo on the correct side of the carcass as advised by the buyer, since two packing plants may require for convenience sake tattooing on opposite side of the carcass.

Imagine This

TIMES are certainly changing. In Canada there has been a great deal of talk about the value of dehorning market cattle and dairy females in commercial herds. In the prairie provinces, governments have established horned cattle funds by act of legislature, under which a deduction is made for cattle marketed with horns, the proceeds to be used for the general advancement of the livestock industry. No one, as far as we know, has attempted to measure the value of these deductions by the in-

creased number of hornless cattle reaching the market, but recently we have heard comments to the effect that it did not seem to have been very effective.

On the other hand, some dairy cattle breeders in the North of England recently decided to do something about the question of horns, and surprisingly enough they were a group of 50 northern breeders of Ayrshires. By a vote of 54 to nine, they agreed that: "We breeders of Ayrshire cattle agree to dehorn all Ayrshire female calves in our ownership born on or after January 1, 1948, and that such agreement shall continue for a period of at least three years."

There was no record at the meeting, apparently, of any Scottish breeders having been contaminated by this fearful heresy, but the secretary of the English Ayrshire Cattle Breeders' Association, who was present as an observer, was of opinion that Ayrshire breeders' clubs, and similar organizations could serve a useful purpose in arranging for such meetings to be held in order that the opinions of as many breeders as possible could be obtained and analyzed.

According to "The Farmer and Stock Breeder," several breeders who voted against the motion favored the change in principle, but wanted to hear from breeders in other areas before committing themselves.

Salt and Pigs

SALT is said to be "the ingredient most often forgotten in hog rations." In a 1946 Wisconsin experiment, salt saved \$20 in feed for each dollar's worth of salt used. Salt-fed pigs gained 1.46 pounds daily, as compared with 1.26 pounds gain each day by hogs fed the same ration except for the salt. In this experiment each pound of salt saved 9.4 pounds of feed.

At Purdue University, Indiana, salt is considered to be vitally important for corn-fed hogs getting a vegetable protein supplement from oil crops including soybeans, cottonseed and linseed.

At Purdue, 90-pound hogs were fed for a period of 85 days on a ration of corn, soybean, oilmeal, alfalfa meal and a simple mineral mixture. Those receiving salt free-choice averaged 255 pounds in weight at the end of the feeding period as compared with 174 pounds for those not getting the salt. It was reported that for each pound of salt consumed there was a saving of 3.8 bushels of corn and four to six pounds of supplement. Not all experiments showed savings as high as this.

Pigs do not need much salt, and only need a little at a time when they have free access to it, but these experiments indicate that it is very important that these small amounts be made available whenever the pig needs it, to efficiently utilize the feed fed and to keep it in a condition of rapid growth and fattening. The Wisconsin experimenters report that it is more important to supply extra salt when vegetable proteins are fed that when the protein is supplied from animal sources and consist, for example, of tankage or whey.

Occasionally someone is met with who believes too much salt will kill pigs. The ordinary method of mixing .5 per cent salt in with the feed, or one pound of salt for each 200 pounds of feed, is a safe method, but may not always provide sufficient salt. If the feed lot is equipped with a salt box from which the pigs can help themselves, they will eat about the right amounts. At Wisconsin, experiments have been conducted with whey containing 1.5 per cent salt, and even up to two per cent. Up to 1.5 per cent salt the pigs ate the whey readily and made similar gains over a two-week feeding period, but when the salt was increased to two per cent, they ate a little at first and then left it alone. What experiments mean is that if pigs are allowed free access to salt, they will not eat too much. Neither at Wisconsin nor Indiana has it been possible so far apparently, to kill a pig by feeding it salt in any reasonable and sensible manner.

Money From Sheep, But-

F dogs were not quite so highly regarded by most people, the sheep business would be in a more flourishing condition. It seems to be the usual experience of those who have tried sheep, that they are profitable enough, if it were not for dogs and coyotes.

In almost all areas in western Canada it is very difficult to secure adequate legislation on the part of municipalities or provinces to protect sheep from dogs, or to secure bounties on coyotes that are high enough to remove this menace from the flock. On the other hand, it seems to be an equally common experience that those who have raised sheep find the returns satisfactory from both wool and lambs and the sale of old ewes. A Saskatchewan farmer told The Country Guide not long ago that when he had a flock of about 35 ewes, his revenue was around \$700 or \$20 apiece. This he considered excellent returns for the amount of feed and labor involved, which was comparatively

Quite recently, the Extension Service of the North Dakota Agricultural College reported that every year since 1924, except one, sheep had made a gross return of at least 75 per cent of their value as at the first of the year, and the statement continued:

"The buying power of sheep, which is the relation between the price of mutton and wool and the price of goods and services a farmer buys, has been about 100 in all except six years since 1915. This buying power, based on January 1 prices of sheep in relation to the general price level, with the years 1910 to 1914 as a standard, has moved in a circle with about six to seven years from one peak to the next, but the long-time tendency in buying power has been up."

Where Artificial Insemination Pays BY natural breeding, even a really good herd sire is not likely to sire more than about 200 calves in his lifetime. Experience has now demonstrated that with artificial insemination it is possible to secure 10,000 progeny from a single outstanding sire. This means that artificial insemination may, under favorable conditions, be 50 times as effective as natural breeding in distributing good blood lines.

Milkdale Aristocrat Rag Apple, an American Holstein sire of outstanding quality, was put into service in December, 1944, by the New York Artificial Breeders' Co-operative. Since that time, it is reported that he has sired more than 10,000 calves. Moreover, his first 10 daughters with one or more herd improvement association records, have averaged 664 pounds more milk than their dams and this milk contains 46 pounds more butterfat, in addition to testing one-tenth of one per cent higher than their dams. This achievement is all the more noteworthy when it is considered that the dams themselves were high producing cows averaging over 500 pounds butterfat per year.

Effect of Hog Marketing Weights

WORK done by the Agricultural Experiment Station of the University of Nebraska indicates that medium to larger-type pigs make their biggest daily gains at between 150 and 175 pounds weight, after which daily gain declines. In recent years, the United States, which formerly marketed very large numbers of heavyweight hogs, has turned somewhat to leaner, lighter hogs, owing to farm labor and market conditions. The earlier, heavier weights were used because heavy hogs provided the most efficient way of marketing the enormous U.S. corn crop.

In each of two years the Nebraska station selected 30 similar pigs averaging around 70 pounds at the beginning of the tests. Slaughterings were made at 25-pounds weight intervals from 75 pounds to 400 pounds, in order to determine average daily gain, average daily rations required, and the feed required per 100 pounds of gain for pigs marketed at different weights.

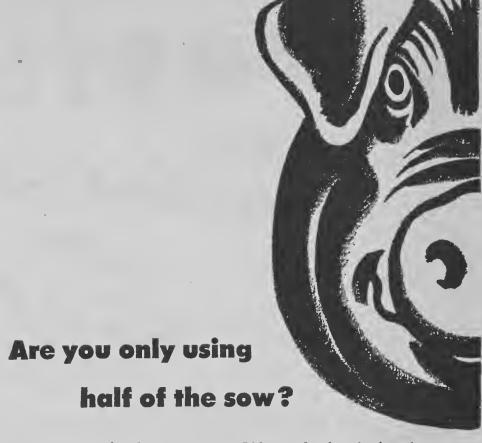
The experiment very clearly demonstrated the fact that between weights of 150 to 400 pounds, the average thickness of back fat increased very considerably, as did also the fat cuts such as leaf lard, fat back, belly, jowls and cutting fat, while the percentage of the lean and bone cuts showed a corresponding decline. For example, carcasses from 150-pound pigs contained 32 per cent fat and 51 per cent lean. while those from the 400-pound pigs contained 55 per cent fat and 34 per cent lean. The hams, for example, of the 200-pound pigs contained 24.15 per cent of fat, compared with 36.68 per cent on the 400-pound pigs, while the percentage of lean decreased from 63.17 per cent at 200 pounds to 52.63 per cent at 400 pounds.

As the percentage of fat was increased, the character of the flesh changed, not only the water content, but the percentage of protein and ash also declining. When the meat was cooked, loss of pork roasts, through dripping, increased with fatness. There was not a great deal of difference in palatability as between roasts from pigs of different weights, but it was reported that the roasts from the heavier hogs were coarser in texture.

It has been consistently advocated by expert feeders as well as graders charged with the rail-grading of hogs, that producers could get far more hogs into the A grades than they do if marketing weights were watched more closely.



"What will happen to us after March 31—Will we go to Britain, U.S., or stay in Canada?"



A pig has already cost you over 100 pounds of grain the minute it's born. If it's a good healthy pig, it'll make it back with interest. But too many pigs are runts or weaklings or dead when they come.

An unbalanced ration is often the cause of pigging-time disappointments. Make sure the ration is right. Provide essential ingredients by adding Dr. Hess Hog Special to your sows' feed. Give the sow and litter Hog Special right along for another reason - pigs often waste feed after they eat it. Our Hog Special pigs always make better use of feed.



This is the time to take extra good care of sows. We believe it'll pay you to add Hog Special to their ration. Hog Special, like all Dr. Hess products, is research farm tested and made under careful laboratory control. Get Hog Special from your Dr. Hess dealer. Hess & Clark, Ltd., London, Ontario.

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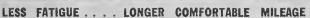
The new Firestone Super-Balloon is truly the tire of tomorrow, a wholly new sensation in restful riding, in nonskid safety, in blowout protection and in longer, more comfortable mileage. Many of the most famous automobile manufacturers will feature it on their 1948 models. And soon you will be able to put new Firestone Super-Balloons on your present car. Watch for them at your nearby Firestone Dealer or Store.

Cross sections show how more air volume and lower pressure permit greater flexing action when Firestone Super-Balloons go over bumps and rough roads.









This tire takes the punishment instead of you and your car. It absorbs road shocks instead of transmitting them because the tire body is larger and holds more air at lower pressure. You can drive farther, faster and longer without becoming tired. Reduced vibration results in the quietest, smoothest, easiest ride you have ever experienced.



The combination of new Skid-Resistors molded into the tread and more area in contact with the road provide sure-footed stops and sure-footed starts on any road in any weather. The Safti-Sured Gum-Dipped cord body and cooler-running resulting from the larger volume of air at lower pressure provide the greatest protection against blowouts ever built



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By preventing road shocks from reaching your car, the Firestone Super-Balloon helps to keep the body, chassis and running gear as tight as new. Many of the irritating and annoying squeaks, rattles and vibrations which occur when parts become loosened by jiggling and jouncing are eliminated. There is less wear on the car, fewer repair bills, longer car life.



FIELD



This Vancouver Island field (left) was uncleared land in the spring. Modern heavy machinery makes quick work of it, and even large stumps are easily removed when blown apart.

Who Should Conserve the Soil?

NTEREST in soil conservation in Canada developed very rapidly during the 30's, when, owing to lack of rainfall and because of continued cultivation, the wind moved many millions of tons of soil to places where it was no longer useful for farm purposes.

There is no way of calculating how much soil was moved by the wind during the long, dry '30's, and certainly no way of calculating how much was moved in a harmful way, such as filling up roadside and drainage ditches, or blowing off the top soil and exposing the seed once or perhaps twice in a single season. However, if we figure a cubic foot of soil as weighing 85 pounds, and if only one inch of top soil were blown off a single section of land, it would amount to 98,736 tons, or more than 43,000 truck loads each carrying two cubic yards. Multiply these figures by any portion you like of the part of the three prairie provinces (say 200,000 square miles) most susceptible to blowing year after year during the '30's, and you can get some idea of what wind can do to top soil in a big way.

It is conceivable that it may come again, and this is the reason why all our departments of agriculture and universities are paying a great deal of attention to measures which will keep soil drifting under control. The Manitoba Soil Conservation Committee, for example, recently presented to the conference of Manitoba Agronomists carefully thought-out and extensive recommendations designed to stop soil drifting by (1) providing the soil surface with a cover, (2) reducing wind velocity with the aid of shelterbelts, and (3) protecting drainage ditches from soil drifts. In addition, there were recommendations for the prevention of soil erosion by water on arable fields, the prevention of gullying in road ditches and at culvert outlets and the protection of new breaking.

The committee points out that -soil drifting in Manitoba "occurs chiefly on fields that are cropped under a fallowgrain system . . . or where the management practices followed are such that crop residues are removed by burning or buried by tillage and soil is exposed without protection to the action of the wind and weather." This problem is applicable to Saskatchewan, Alberta and Manitoba alike.

The committee strongly recommends field shelterbelts in areas where sandy or light-textured soils are susceptible to drifting. It is pointed out that shelterbelts for field protection should be provided by from three to five or more rows of trees and shrubs that will grow to a good height and density.

The time to prepare against serious erosion, either from wind or water, is now. Any farmer in the three prairie provinces who is not sure of the best way by which he can protect his soil from erosion can very easily obtain the

best information available by writing to any of the provincial authorities, or to any of the provincial departments of agriculture, Dominion experimental farms or stations, or by paying a visit to his agricultural representative. A half hour of time taken to write a letter, and a four-cent stamp, may be the means of saving hundreds of dollars. You do not need to know the name of the particular individual at any one of these universities, departments of agriculture or experiment stations before writing. Just write to the station and the right person will receive the letter.

Flax in Southwestern Manitoba

SOME of the best crops of flax grown in this section in 1947 were grown on spring-broken couch grass sod.

The best returns were obtained from sod-bound fields that had been either pastured or cut for hay for several years; the poorest-from fields where the last season or two had grown a heavy crop of couch grass. The best returns were from shallow breaking with a regular breaking plow, and packing before and after seeding. The poorest returns were from deep plowing with stubble moldboards. In some cases, the "Fred Wolfer" plan of handling couch grass sod has given good yields of

This year's experience has proven the value of couch grass as a restorer of soil fertility. Some fields that were overrun with annual and perennial weeds ten years ago and had been in couch grass for several years gave clean crops of flax with five per cent dockage.

But brome grass or crested wheat grass will restore humus and fibre to the soil and choke out perennial weeds in half the time it takes couch grass to do the trick. This statement is based on actual tests. Try it and see, You can put fertility into the soil with a one-way disc .- Gordon McLaren, Pipestone, Manitoba.

Is There Moisture for a Good Crop? WATER is the first and the principal limiting factor in crop production over large parts of the Canadian prairies and the great plains of the United States. For this reason the water requirements of plants and the possibility of predicting, at seeding time, a successful or unprofitable crop, have been the subject of study both in Canada and the United States for a great many years.

In the United States, a comparison has been made of available soil moisture at seeding time, with following yields of winter wheat, in various places and for periods up to 30 years. The results have indicated that seeding grain in a dry soil resulted in failure about seven times out of ten. If the soil moisture goes to a depth of three feet or more, however, the chances of failure decrease to about one in ten, and yields of 20 bushels per acre or more are secured in two years out of three.

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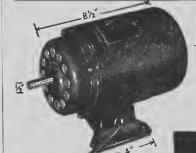
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The hardships of winter travel, or muddy roads in the spring can easily be overcome with a new set of these chains on your tires.

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Similar results were secured with spring wheat in the northern great plains.

Experiments in the field, conducted by the Soil Research Laboratory at the Dominion Experimental Station, Swift Current, have shown that one pound of threshed wheat involves the use of about 2,000 pounds of water. On this basis, an inch of rain over an acre of land, equal to 113 tons of water, would theoretically produce two bushels of wheat. In dry seasons, the water requirement of plants is much higher than in seasons of higher rainfall. This is due to the fact that water requirement consists not only of the amount needed in building plant tissue, but, in addition, a very large quantity of water taken in through the roots and given off through the process known as transpiration, as well as the amount lost from the soil by evaporation. By far the greater proportion of the total water requirement is used up in transpiration and in soil evaporation.

In some American States large numbers of farmers measure soil moisture at seeding time on the advice of State and Federal authorities. In one year the Kansas Extension Service reported that more than 17,000 farmers in 46 western counties of the State based their decision on whether or not to plant winter wheat, on soil moisture measurements made themselves, by digging a hole with an auger or posthole digger.

Authorities at Swift Current state that a heavy crop of wheat in Saskatchewan may use about 37 tons of water, or approximately 1-3 of an inch per acre, in a single day; and found, during one period of 16 days when water requirements of a crop were measured, that a total of five inches of water was used in this period.

The principal reason why wheat is so prominent a part of farm economy in the drier areas of the prairie provinces, is that this crop has a lower water requirement than any of the other grains, such as oats and barley.

World Shortage of Fertilizers

greater demand the world over than ever before. Before the war, world consumption of nitrogen fertilizers was about 2.4 million tons. Last year, world requirements were said to be 3.3 million tons, and this year 3.8 million tons. Production of nitrogen fertilizers is still only a little above pre-war, and a shortage of around one million tons is being felt in every food-purchasing country. Today, only Chili, Canada, the United Kingdom, Uruguay, and Belgium, produce more nitrogen fertilizer than they require, and are regarded as net exporters.

Before the war, about 12 countries exported nitrogen. Germany was the second largest pre-war exporter and now must import part of her requirements. One of the largest plants supplying Europe before the war, was located in Hungary, and was completely de-

stroyed during the war. The United States, while the largest producer of nitrogen fertilizer, has always been a large importer, and is consuming more nitrogen fertilizer than ever since the

For these reasons, nitrogen fertilizers are still under allocation control by the International Emergency Food Council. Demands for nitrogen are expected to increase still further, but there is some doubt as to whether world production can be increased appreciably. The chief importers for 1947-1948 will be the United States, France, China, Egypt, Holland, Spain and India. Phosphorus is the second of the three important nutrient materials supplied in commercial fertilizers. It is secured from phosphate rocks, which are fairly uniformly distributed over the earth's surface. Most important, however, are the United States, French North Africa, Egypt, and some islands in the Pacific. During the war these fertilizers were the scarcest in Europe, which normally depends on North Africa.

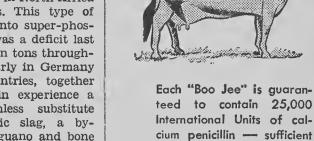
Since the war, production has increased materially, especially in North Africa and the United States. This type of rock is also processed into super-phosphate, of which there was a deficit last year of about one million tons throughout the world, particularly in Germany and Spain. These countries, together with Austria, will again experience a deficit this year, unless substitute products such as basic slag, a byproduct of steel mills, guano and bone products can be provided.

Potash is the third important element in commercial fertilizers, and is produced in the United States, France, Germany, Spain, Palestine and Russia. Post-war production has been substantially higher than pre-war, but it is calculated that the supply in 1947-1948 will equal the world demand.

Northern Pastures After Fires

SOME settlers in northern wooded regions regard open areas resulting from fires that have developed into permanent pastures, as their most valuable property. A. C. Carder, of the Dominion Experimental Station, Beaverlodge, Alberta, emphasizes the value of these pastures founded on native grasses, and suggests measures for improving them.

Anyone who has travelled much in the northern areas will have been impressed with the amount of burnt-over land and by the rapid growth of weeds and wild herbs developing in the ashes. The tall, charred trunks of many trees remain standing, and the only use to which these areas can be put is as pasture for livestock. In the course of time, these burnt-over areas may, as Mr. Carder suggests, carry "a struggling infusion of native grasses," the carrying capacity of which is limited because for a long time the grass is sparse and the growth is slow. Moreover, this grass lacks the nutritive quality of the



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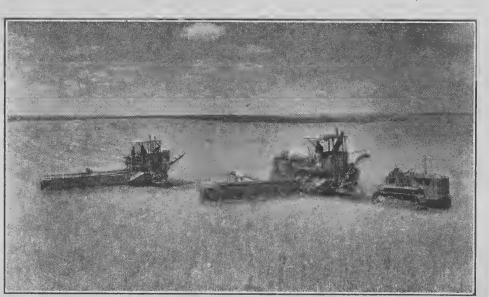
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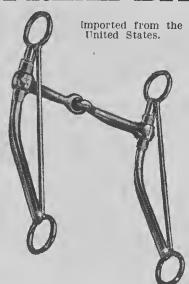
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prairie short-grass species. The suggestion is made that it is possible and reasonably easy to secure good catches of brome, crested wheat grass, creeping red fescue, timothy, sweet clover, alsike and sometimes even alfalfa and red clover, provided the seed is encouraged to start before the weeds in the spring.

The time to start is in the early spring following the fire. Seed scattered on top of the last of the snow will quickly find its way down into the ashes of the fire. Livestock turned into the open area will help materially by trampling the seed into the ground. Given a start, the tame grasses and legumes will find conditions suitable for their growth. It is necessary however, to graze only lightly for the first year or two, and perhaps to scatter some additional seed over portions or all of the area.

Where a permanent native meadow has been established, it is more difficult to incorporate tame species of grass into it. The carrying capacity of such pastures will be greatly increased if cultivated species such as brome, sweet clover and timothy can be established. Here again, the difficulty is to get the seed where it can germinate and the young plants maintain themselves. In ground which has not been thoroughly cleared, the use of implements is not likely to be profitable, so that again the trampling of livestock must be relied on to work the seed down, supplemented by additional seed from time to time and the avoidance of overpasturing.

Tame Hay and Pasture

TWELVE illustration stations in Manitoba have been experimenting with tame hays for forage and pasture for several years. For the past 12 years profitable yields of tame hay have been harvested annually, and a report states that "on many occasions grass and alfalfa mixtures have produced from .75 to 1.25 tons per acre of top quality hay, in addition to supplying livestock pastures superior in quality to the average wild land and bush pasture.

Authorities at Brandon, commenting on these experiments, say that legume and tame grass pastures continue to carry two animal units per acre over the normal pasture season, for every one carried by native pasture.

At Arborg, in the Inter-Lake area, for example, 19 acres seeded to a mixture of alfalfa, timothy and meadow fescue pastured 14 animal units for the summer, and in addition produced one ton of quality hay per acre. At Hargrave, a 23-acre field of alfalfa and timothy carried 15 animal units for the summer and produced over half a ton of top quality hay per acre. On one station, 2.37 tons per acre of tame hay was secured from two cuttings, and the average for all stations, including fields used as pasture as well as the lowest producing fields, was 1.19 tons per acre.

Renovating Manitoba Hay Fields

SIX tons per acre of rotted barnyard manure, applied early in the spring to five and six-year-old stands of alfalfa and brome-alfalfa mixtures, on the sandy soils of the Dominion Reclamation Station, Melita, gave substantial increases in yields of hay. This was especially true in the case of brome grass, where results from manure were better than from an application of 100 pounds of 16-20-0 ammonium phosphate applied with a single disc grain drill. Alfalfa alone gave a greater response to the commercial fertilizer, while an alfalfa-brome grass mixture yielded somewhat similar results from both treatments. It is also reported that discing these old stands in the early spring resulted in increased yields of brome grass and of the brome and alfalfa mixture, but did not appear to be effective with alfalfa alone.

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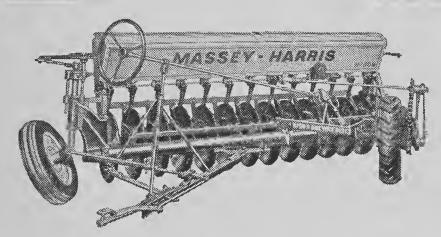
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ALFALFA FOR MANITOBA

Continued from page 9

The advantages of this plan are well worth considering. The alfalfa seed is sown about one inch and the grain and grass mixture a little deeper. After the grain is well established it protects the more delicate alfalfa and grass plants from drifting soil. In the later stages of growth the grain does not shade the alfalfa, consequently the alfalfa grows vigorously and gets ahead of the grass. The half rate of seeding the nurse crop of grain has reduced the yield of the grain crop harvested only slightly, less than was anticipated. Some excellent stands of alfalfa alone and in mixtures with grasses have been established on a number of fields on the Reclamation Station.

Thas been recognized for a long time that alfalfa uses atmospheric nitrogen and that it stores a surplus where it can be made use of by succeeding crops. Several years ago a report from the University of Saskatchewan stated that grass plants growing close to alfalfa plants used some of this nitrogen. The writer has observed that in old stands of alfalfa and brome mixtures the grass plants were taller and greener close to the alfalfa than elsewhere in the immediate vicinity.

The Brandon Experimental Farm has found grasses increased their rate of growth and yield when fertilized with 16-20-0 ammonium phosphate in the spring. Mixtures of alfalfa and brome did not respond to the fertilizer, indicating the alfalfa was supplying the nitrogen. At the same farm the crops grown on alfalfa-brome sod yielded eight bushels of wheat on the average over wheat grown on brome breaking and given identical treatment. On the Reclamation Station an increased weight per bushel has been observed when wheat is grown following the breaking of legume sod and when compared with the weight per bushel of wheat grass on grass sod receiving the same cultural operations.

In both Canada and the United States much stress is placed on proper cultural practices in their soil conservation programs. There are extensive areas in the Great Plains portion of this continent where crop rotations can only be used in an extremely limited way. There are numerous and in some parts extensive areas where the regular return of cultivated fields to grasses and legumes would be financially profitable as well as beneficial to the land. The prairie surface soil with its abundance of decayed vegetable matter was built up mainly from the decay of grasses. The regular return of cultivated land to such vigorous growing crops as alfalfa and brome will reduce materially the number of cultivations necessary to keep weeds in control in fallowing and thus avoid over-pulverization of the soil by excessive cultivation. Besides more effective weed control, the soil fertility and fibre will increase and the farms' financial returns improve, providing the hay and pasture are marketed through good livestock.

FITTING the legume grass and hay crop into the grain cropping system is a major problem. The Brandon Experimental Farm on its substations is using extensively an eight-year rotation with three-eighths of the land in sod forming crops; one-half the land grows grain and the remaining oneeighth is fallowed. Systematic rotation

of crops is practiced so that for three years out of eight the land is in sod.

Annual weeds make only a weak growth the first year a crop of alfalfa is grown and then disappear after one or two seasons. Perennial weeds such as Canada and sow thistles find the competition of the deep rooting alfalfa more than most of the plants can tolerate. The few plants that survive several years' competition are weak and usually disappear when the sod is broken and cultivated for grain.

Couch grass is the arch enemy of alfalfa. More stands of alfalfa have been plowed up at the Brandon Experimental Farm because of the spread of small couch grass patches than for any other cause. This is a common experience in Manitoba. For this reason when alfalfa is to be left down more than four years it is important that this weed bc eradicated before seeding a field to alfalfa.

On the other hand, Carl Swanson farming near Melita, cultivated 70 acres of old couch sod in the late autumn of 1943 and sowed alfalfa seed just at the time the ground became frozen for winter. The alfalfa is an uneven stand, thick in places and thin in others, but each year he has cut a mixture of alfalfa and couch grass that has provided him with a wonderful amount of good hay. It is possible that the old rootstocks of the couch are so weakened that they cannot compete as successfully as younger and more vigorous roots.

ONE of the factors limiting the acreage of grass and alfalfa is the high cost of the seed. Usually at least four crops of alfalfa are harvested from one seeding, often more. Looked at from this light the cost is not serious providing a stand is established. It is this uncertainty of getting the crop established that deters many farmers from seeding down. Actually alfalfa in the seedling stage is hardier than sweet clover. The main precautions are seeding early in the spring while the surface soil is moist and the weather cool, and seeding into a solid, well prepared seed bed about one inch deep. Only the hardier varieties should be used and the seed of northern origin. If a nurse crop is to be sown the rate at which the crop is usually sown should be reduced about

In a great many districts it is the exception to find good sets of alfalfa seed. In most districts farmers will have to be satisfied with growing alfalfa for feed. There are a very few sections such as the Inter-lake district north of Winnipeg where alfalfa produces seed practically every season. In most other parts the seed sets only in occasional seasons that are few and far between.

There should be a top growth several inches high on alfalfa during the late autumn. This means the roots will be supplied with plant food for an early and vigorous spring start. The snow held on the field by this growth gives some protection to the crowns of the alfalfa plants and increases the soil moisture when it melts in the spring.

Labor-saving haying equipment is important not only to relieve the haymakers of a great deal of heavy work, but to speed the work so that more hay can be made in a comparatively short season and the hay saved at the stage when it makes the highest quality hay. Second to poor stacking, cutting hay too late is responsible for more inferior quality hay than any other cause.

With weather forecasts as a guide to probable weather conditions and with special haying equipment to speed haying, more acres of grasses and legumes on all farms where livestock are kept should be the aim of every progressive



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The Pacific Oyster Comes Back

An oyster at Colchester is a different thing from an oyster in Washington, D.C., and a Vancouver oyster is something yet again

By HARRY GREGSON

N unexplained natural phenomenon in the Pacific oyster world, which may have far reaching effects on this million-dollar industry, is causing headscratching among biologists.

The native Olympic oyster, which has been disappearing for years, has staged a comeback. It is appearing in increasing numbers in oyster beds at Ladysmith Bay, Nanaimo and Pender Harbor in Vancouver Island and also at beds around Boundary Bay, south of Vancouver.

This comeback of the native oyster may cause huge losses to the oyster industry . . . it may, on the other hand, depending on public taste, turn out to their advantage.

Disappearance of the Olympic oyster has been for years the subject of learned treatises. Some biologists maintained that the raiding of the "wild" oyster beds by sailing ship skippers in the early days depleted their breeding capacity to such an extent that they were unable to survive. Others maintained that the capricious waters of the Pacific coast had changed their temperature and effectively chilled the romantic life of the native. Still other producers, notably American oyster companies, whose beds stretch all down the coast from Vancouver southwards, found industrialization, which brought with it oil tankers and other polluters of the water, to blame and this has been the subject of various law suits.

One of British Columbia's most eminent oyster biologists branded the oyster-drill, urosalpia cinereos, as the culprit. This oyster-drill is a whelk-like gastropod imported from Atlantic waters with blue-point oysters, which found boring into the shell of the native Olympic a less tough assignment than hacking at the armor of the blue-point.

Blue-point oysters from the Atlantic were brought to this coast not for breeding, but to mature in Pacific beds and help out production in view of the declining numbers of natives. Incidentally the Atlantic oyster drill is also largely responsible for the havoc in Whitstable and other famous British oyster beds.

Another culprit, which has certainly been partly responsible for the decline in the native oyster, has been the Japanese oyster drill, brought to B.C. with imported seed oysters. The menace of the Japanese oyster drill was so urgent that Canadian biologists were sent to Japan to devise methods of killing it before seed oysters were sent across the Pacific. They found that a strong solution of salt water killed the drill without harming the oyster and thereafter insisted on the saline treatment for all seed oysters before dispatch.

But even with all these precautions, the Olympic native continued to decline, while its bigger and stronger imported Japanese brother spread out all over the B.C. oyster beds. Investigating the

breeding habits of the oyster, blologists found that Japanese and Atlantic oysters are not hermaphrodite, as is the native Olympic. Some experts contended that the hermaphrodite native, which, like the earthworm can be both male and female at the same time, is in a less advanced stage of evolution and therefore weaker than the Jap-



anese and Atlantic oysters which can be male one year and female the next, but not both together.

Cross-breeding, these experts maintained, was more conducive to survival than hermaphrodism, which is found only in the earliest and least evolved forms of life on this planet. Hermaphrodism, they said, means inbreeding, and inbreeding weakens.

But the humble Pacific Olympic staged a biological comeback when it proved that although a hermaphrodite, it indulged in cross-breeding on the same principle as its more advanced Atlantic and Japanese brother. Because, although the native is both female and male at the same time, producing both eggs and sperm which it discharges into the water, neither eggs nor sperm ripen simultaneously. Whichever ripens first is discharged into the water and is there fertifized by the eggs or sperm of other oysters.

The biologists were back where they started and apart from the depredations of the "foreign" oyster drill, could not prove that the native suffered more from its hosts of other enemies than the Japanese and Atlantic varieties.

Seabirds, starfish, mussels and a creature called the sponge, which literally smothers the oyster to death, paid their unwelcome attentions to oysters irrespective of oyster origin. Storms, the greatest enemy of all, which pile up the sand and stifle growing oysters, were equally as fatal to foreign as to native oysters. The experts gave it up and set about re-stocking the Pacific oyster beds with Japanese seed, of which 26,000,000—the first consignment since the war-were imported this year and placed in B.C. beds to develop.

THE comeback of the native now tends to upset all these plans for the future. "We don't know what is causing the resurgence of the native," said Dr. R. E. Forster, director of the Pacific biological Station at Nanaimo, "but the Olympic which a few years ago was near extinction, as it was unable to compete with the Japanese oyster, is now very much to the fore again."

He is delighted. "We regard the native oyster as superior in flavor to the 'foreigner'," he declared. "It makes a wonderful oyster cocktail."

Epicures also are pleased. The native is a high quality oyster, making up in flavor what it lacks in size. It has even been known for oyster vendors to trim down the large Japanese oyster to make it look like a native Olympic or Atlantic blue-point and so push sales.

But B.C. oyster producers are not so pleased at the native resurgence. In view of the native's apparent doom, they have educated the public to prefer the larger Japanese oyster, which gives the oyster fan something "he can get his teeth into." Also the larger Japanese oyster is less costly to gather in this province of high labor rates. About 10

of them go to a shucked pint as compared with 15 more natives.

The 66,000 shucked gallons of oysters . . . about 5,280,000 units . . . produced in British Columbia last year were largely of basic Japanese stock. An expensive industry has been built up on foreign oyster stock which the resurging native now threatens to revolutionize.



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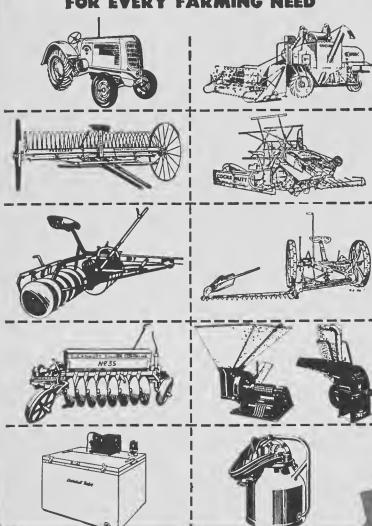
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Do Angoras Pay Off?

Queenie Gee will not know till spring whether she or the rabbits have been plucked, but it has been lots of fun

Angoras. Today in 1948 almost as many are burying them. It was in '44 we discovered the Angora rabbit. Were they worth handling at \$10.00 a pound for first and second clip—Definitely! Bill bought a trio from F. F. Cotrill, of St. Vital, Manitoba, and the following is a blow by blow account of our education in rabbit raising for wool.

This is not the ordinary rabbit which thrives on a piece of carrot, a few oats and a handful of hay, but a delicate piece of machinery for growing wool. These rabbits can, and often do lay down and die for any one of a half dozen reasons. Today we rarely feed greens. Bill found that one leaf too many, freshly plucked, often meant the difference between life and death to a growing bunny. . . . Think of the extra work entailed in plucking fresh grass or garden stuff for 70 rabbits.

Their diet must be as carefully watched and compounded as for a high producing dairy cow and they must be as carefully housed. As one young veteran remarked, "If it's too cold, they don't wool worth a darn!"

Advice on how to build convenient hutches stressed the fact of leaving the way open into the mangers for easy feeding of hay. The rats found these, and in 44 hours we lost our first 50 babies. Bill closed the openings with swinging boards and wintered 50 woolers, the cheques averaging \$26.00 a month.

When rabbits are clipped their room temperature must not go too low or too much wool must be left on to keep the bunnies from dying of pneumonia. We clipped short, then rubbed a dob of phrenothiozine ointment on each pink nose to ward off snuffles. They shivered and looked forlorn, but lived. Plucking is really the answer to Manitoba's subzero weather. Enough wool is left on each time to keep the animal comfortable.

THERE are two schools of thought on plucking. One says pluck every month and the other says pluck every six weeks. I have come to favor the latter; it gives a breathing spell. The operation takes at least three-quarters of an hour if the rabbit is a heavy wooler and to avoid making the animal squeal. Longer if there are mats to be clipped.

Is plucking cruel? Let us look at it this way. It's the rabbit's way of making a living. We mortals who needs must feed, clothe and house ourselves could often squeal at fate as she plucks and trims us down the years.

To date we have clipped and plucked in the house during the winter months. This means 70 trips out and back with a rabbit, come blizzard or sunshine. Yet it has been repeatedly said that raising Angora rabbits is for old people and children.

We have discovered it means constant daily work . . . too daily when the thermometer goes down to 40 below and the wind tosses the snow into huge drifts around the barn and haystack. The winter of '46 and '47 our rabbit house was almost buried in snowbanks six and eight feet high. To carry a bucket of water to waiting rabbits over these, to leap down to the door with a full pail of water, required the poise of an acrobat.

The only way to raise Angoras for wool is to build a large, well-insulated, well lighted barn with modern hutches, with a loft overhead to house the hay and grain from winter snow and summer rain. Include a heated room wherein to pluck. If you can afford all this, be sensible, leave the money in the bank and enjoy the interest. Today with hay at \$16.00 a ton f.o.b. your hay-stack, oats at 75 cents a bushel and climbing, it seems more a labor of love to keep Little Bright Eyes in the style he demands.

Each rabbit must have his individual hutch, though two may share a manger of hay. With individual oat dishes and water cans, it means 70 doors to open for grain and water; half that number for hay, unless a man possesses more than one pair of hands. The droppings must be swept up and carried out at least every second day. Since the floors of the hutches are of one-inch mesh wire, or better still, three-quarter inch, an amazing quantity of hay falls to the floor and is wasted.

In February, 1947, the bottom dropped out of the wool market. Things sounding the way they did we decided to pluck and even to spin some of our unsold wool. I borrowed "Ye olde spinning wheel," but got nowhere fast. Definitely there is quite a trick to spinning Angora wool. A few lessons from a grandmother who had taught spinning in the schools of Belgium put me right. Had I only known there was Mrs. Nick just down our street who had spun not only wool but flax for linen. . . .

It is fascinating to see the freshly plucked, gleaming Angora wool turn into yarn as fine as sewing cotton or larger if desired. To look in the knitting book and see what could be knitted if and when one had the time.

The mills reopened in the fall with prices of \$8.00 and \$6.00 for first and second plucked, \$5.50 and \$4.50 for first and second clipped. The price for plucked sounds fair enough. The trouble lies in the doubled feed costs. At \$10.00 a pound first and second clipped we figured on \$6.50 per rabbit per year. Not all wool is good. There are mats for \$1.50 and 50 cents and short stuff. Halve this and get \$3.25. It takes \$2.50 to feed one rabbit for one year and this means housed and fed 365 days averaging an eight-hour day with take home pay \$1.00 per rabbit!

THE pleasant way to keep Angoras is to have a couple of dozen super woolers, and to pluck, spin and knit for personal use—a hobby.

Of the five Angora breeders in Virden, three have gone out of business completely. Buried their rabbits and sold their barns. A thousand rabbits bit the dust. Two breeders have token herds. What will we do?

The Angora is a beautiful creature, with its ruby eyes and fluffy long white wool, or pathetic when sheared to its pink skin. It is a delicate baby to raise, a temperamental adult and mother, but who can fail to like the little critter who pops a head out of an open door and steps into the oat pail when its dish isn't filled quickly enough?

As Bill says, "We have antied our hay and oats for the winter. In the spring we will call the hand." If we have lost our shirts—well—it will at least be





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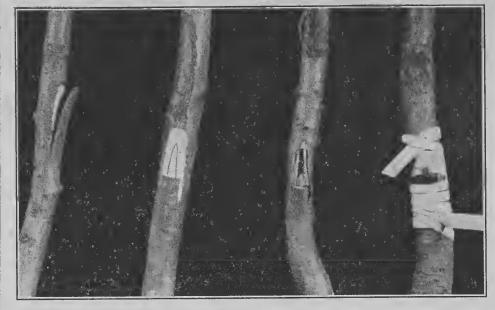
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The Strawberry Trail

An experienced breeder of strawberries reports progress and believes satisfactory varieties must be produced in the West, for the West.

Y first experience with strawberries was when I was a very small boy. My father and a neighbor each had secured 600 plants. These had fruit on the first year, which the small boy liked very much to find, but it was his last sight of them for a long time, as all were dead the next spring, although mulched with clean straw. It was clean in those days, in the early '80's. This venture at growing strawberries with such results sure convinced the two pioneer growers that it was bad practice to throw away good money and work for experience.

Even today, plants bred in milder parts are not up to the mark here. Dunlap, Premier, and others do not fill the bill, when varieties bred here in Manitoba can get a dollar a case more and a much better crop. Although Dunlap is recommended, I discarded it several years ago along with several others. Anyone visiting Morden Experimental Station will see the difference in the prairie and imported varieties. This Experimental Station is doing more for the Mid-West than any other agency. You can see almost anything worth while and those interested, I am sure, can get any information desired and be shown the varieties under test. They have one of the largest collections to be found anywhere.

We can expect a flow of new varieties of strawberries in the future, each probably a favorite with someone where it does best. This not only applies to strawberries but other small and large fruits. Our success lies ahead. It will take time but there is plenty of that ahead, and what one man starts there will certainly be someone to carry on.

In one issue of The Guide I read an article by Mr. Wright of Moose Range in which he stated that the Gem variety is not standing up to our first expectations. He may have something there, as this last two years Gem has not done nearly as well as it has in years past, but in my experience with many varieties, I find the season has a good deal to do with it. Some varieties will do well under certain conditions and fall down badly under others. This is true of most varieties from the east. Take British Sovereign here. One year you will find you have a fine crop, and thereafter likely nothing. I had two varieties this year that hardly had a blossom on. The plants were vigorous and healthy. These were Tupper and Glenburn. Other years they produced good crops, especially Glenburn. There was a nigger in the fence somewhere. Gem gave only a fair crop in the fall on this year's planting, but the season and conditions were against it and for that

matter all varieties. Green Mountain, Glenciss, Glenora, and Glenevis did better, but not up to their general performance. I picked some fine fruit from Glenciss and G.E. 120 on November 6. Not bad for Manitoba.

I FIND that Green Mountain can take more frost if the berry is formed, but the bloom will freeze. On others the fruit will freeze, but will come again. Gem will do this. Mr. Wright, I believe, is correct when he says that the daughters of Gem will take Gem's place. I have a whole family of them and they are of a much better quality, but they also have that queen of everbearing strawberry blood in them, namely Wayzata. I have also tried the new Reward. So far it is not up to near first place. With me it is a dwarf growing plant, fairly hardy but too late. Minn. 1165 does not take kindly to my conditions here; it also seems late. I am trying some of Mr. Porter's, but I have not had them long enough to give a candid opinion of how they do here.

In the June-bearing varieties, Glenheart, Glen, Glenmore, Glenabie, and some numbered ones gave a fine crop. Glenmore had a slight mildew which made the fruit smaller. Marvel and Minn. 1153 carried heavy crops but had mildew so badly that the hot sun dried the leaves up. This reduced the crop. These two usually give fine crops every year. Marvel is the only variety I retained of the older varieties such as Dunlap and the so-called Aroma and so forth.

In my experience with growing, testing and breeding this fruit, I have come to the conclusion that it is up to the western horticulturists to produce in the west for the west. In the process of producing new varieties here, the weak fall by the way and what is left is hardy. If you are lucky to get a good one from what is left, so much to the good. That is what keeps the plant breeder going—it's the mystery ahead.

In one cross, No. 74 crossed on Simcoe, I had a plant that set four runners, and the first berries of these five plants filled a pint basket over the top. Not bad, when the fruit was top quality. The next year I had no fruit, no plants -all had killed. I was not prepared for this as they had wintered once and I had thought all tender ones had killed out, as almost half died. This was the only extra-large-fruited one of the

HAVE tested many varieties from Ottawa. Some I was very pleased with, but I found that they had to have suitable seasons. Ralph and Elgin are tak-



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ing to my conditions. Tupper is good but on the tender side.

In growing strawberries, do not keep your old beds too long. If the season is wet, you may get a good deal of fruit, but if it's dry, it is a complete loss. In old beds the root system is poor and too short to reach down to moisture. A good cultivated bed is the best. In the first year, strawberries require a good cultivation and runner plants set early, as it is the amount of root and leaf that produces the amount of fruit. Very late-set runners with only odd leaves do not produce, especially in the Junebearing varieties.

No fruit for immediate consumption should be picked in an unripened stage. Let us take the first berries to come on our market. They command a high price just because they look like strawberries, which they would be if ripened in the way nature intended them to be. One man remarked that he liked homegrown strawberries because he didn't have to ask what he was eating. Anyone who has some garden space can have some. They are not hard to grow, and in the small garden the everbearing varieties are the best, as they give a fairly continuous crop. Then you have those zestful, crushed (not sliced) strawberries with cream, sugar or both. ---"Glenelm, Man."

Dry Land Vegetable Gardening

A NEW bulletin on dry land gardening has been written by Erdman Braun, horticulturist at the Dominion Experimental Farm, Brandon, and Charles Walkof, vegetable specialist at Morden. It is dedicated to the proposition that every farm home should have a good vegetable garden, and upholds the thesis that a garden can be a success, even under dry land conditions. Most prairie farms do make some attempt at a garden, but there is little doubt that farm family living on thousands of prairie farms would be improved if more attention were paid to weed control and the conservation of soil moisture in the drier areas.

The authors have based their comments on experience obtained in drought areas during the '30's when gardening on dry farms was probably as difficult as it will ever be. They strongly recommend a dry land garden large enough so that half of it can be summerfallowed each year. They also tend to favor fall plowing, followed immediately by harrowing on heavy soils, to break up the large clods and encourage mellowing of the soil during the winter. If light or sandy soil is fall plowed, care must be taken to prevent soil drifting in the winter. This sometimes means covering the soil with clean, sweet clover hay or well rotted manure. If spring-plowed, the soil should be packed immediately so that it will not dry

The authors recommend caragana and villosa lilac as shelterbelts for gardens and for trapping the snow during the winter. Larger trees, such as poplars, maples and elms are useful, but tend to take too much moisture and plant food from the soil, the effect being noticeable out from the trees for a distance up to one and one-half times the height of the trees.

It is suggested that water can be trapped from melting snow by working up a low dyke, ten or 12 inches high, along the sides and the lower end of the garden. If the latter is on a slope, the water is more easily ponded and better distributed by providing several dykes crosswise of the slope.

This publication is short and easily read. It emphasizes essentials such as fine and firm seed bed, early preparation of the soil and the use of well-rotted barnyard manure before plowing, wherever possible. Furthermore, it suggests the application of well-rotted barnyard manure scattered over plowed land and harrowed in.

Annual Flowers

By C. F. PATTERSON University of Saskatchewan

NNUAL flowers occupy an important place in decorative gardening. Many of the most popular dening. Many of the most popular group and they are used widely and extensively in gardens throughout the land. A long season of bloom is characteristic of many of the annuals grown; and flowers in profusion on plants, from late in June or early in July until heavy frosts occur, are not uncommon.

A few annuals that are well worth growing and that can be made to do well from seed sown directly in the garden are: Zinnias, pot marigold (calendula), California poppies, godetia, clarkias, shirley poppies, sweet alyssum, candytuft, mignonet, phacelia, portulaca, annual lupines, love-liesbleeding, French marigolds and sweet peas. Most of these are obtainable in a variety of colors and some in a variety of types. The godetia is one of the most floriferous, easily cultivated, low-growing annuals and should be used much more widely than it is at present. For those flower lovers that are fond of large flowered zinnias, Crimson Monarch, a variety in the dahlia-flowered class, is strongly recommended. Pink California poppies should be included in the collection of annuals grown from seed sown directly out of doors. If mixed sweet peas are desired, good practice is to buy seed of a few good named varieties of the colors desired and then to mix the seed.

Where the longest season of bloom possible with given plants is desired, the use of kinds usually seeded indoors is necessary. These are started in March or earlier and are transferred to the garden about the end of May or the first week in June.

One of the most successful groups in this class are the petunias. The petunias demand sunshine in abundance and in no other part of the country is sunshine more plentiful than in the West. They are free flowering and continue to bloom until cut down by heavy frosts. They come in great variety. If a giant white is desired, Snowstorm is a good variety to grow. This produces flowers three to four inches across, and produces them freely. Theodosia is a very satisfactory large-flowered variety with ruffled wine-colored flowers. Where flowers of medium size will meet one's needs, Celestial Rose (pink), General Dodds (red), and Alderman (violet), are excellent. All the varieties mentioned are strong growers and free bloomers.

The snapdragons occupy second place on the list of annuals to be started indoors. These are well known and require little comment. One should not, however, overlook the special virtues of some of the old varieties and the virtues of some of the new, strong-growing varieties. Alaska is an excellent well-established white variety; Ruby is a very fine red variety; and Glorious is a very fine orange. Velvet Giant is a fine, new large-flowered crimson and Burpee's Tetra is recommended where a mixture of colors will meet with approval.

For popularity, the pansies are perhaps without an equal. The older and smaller-flowered varieties are being replaced by those with larger flowers. The latter are under various names and some of these are superior to others. Roggli's Giants, Oregon Giants and Steel's Jumbo are excellent large-flowered varieties that can be obtained from many seed houses. The Swiss Giants, in varieties which come uniform in color, are very satisfactory. The variety, Alpenglow, which is rich wine red, is very beautiful. Coronation Gold is an outstanding pure yellow and Pure White is what its name im-



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FOR

1948

POULTRY

Conducted by Prof. W. J. RAE, University of Saskatchewan



fGuide photo.

All reports indicate that orders for day-old chicks are sharply down this year, when well mean high egg prices and lost revenue for many farms next winter. ar, which may

Turkey Eggs

ANADA'S austerity program is having a very direct effect on the turkey industry. We have always pointed with pride to the importance of the turkey crop in Canada's agricultural economy, especially during the war years, when the production reached a very high level. Along with the increase in size and number of farm turkey flocks came the establishment of commercial flocks and growth of commercial hatching of turkey eggs and the sale of turkey poults.

Unfortunately the demand for dayold turkey poults grew much faster than the supply of local hatching eggs. Canadian turkey growers apparently did not fully appreciate the importance of producing hatching eggs in commercial quantities, with the result that last year large numbers of turkey eggs were imported from the United States. Now that it becomes necessary to conserve American dollars in Canada, governmental control orders have cut off completely these American eggs.

The present prospects seem to be that there will be a drastic reduction in the number of poults hatched in commercial hatcheries, unless Canadian turkey men can rise to the occasion and produce the eggs so badly needed, though this is hardly likely, because hundreds of turkey growers marketed their surplus pullet stocks last fall. It looked like a case of a bird on the market being worth two in the flock. Prices were good and feed prices somewhat higher than those which had prevailed during the summer. It would seem that in the light of known facts this was a serious case of misjudgment. However, the future may prove to be brighter than anticipated, but everything seems to point to a tremendous drop in the turkey crop for 1948.

R.O.P. Pullet Chicks

WE hear a great many questions these days about the new grade of baby chicks. Chick buyers have become quite accustomed to the meaning of R.O.P., R.O.P.-sired, and Approved, as applied to baby chicks, but now along comes another term. What does it mean? Well, in so many words it is a wing-banded female chick produced by the R.O.P. poultry breeders from matings of R.O.P. males to R.O.P.-certified hens and pedigree pullets under R.O.P.

The purpose for such a grade of chick is to round out the National Poultry breeding program, to bring about greater production efficiency. The National Poultry breeding program has three main phases, namely the R.O.P. breeder

who produces the elite foundation breeding stocks; the Approved flock which provides the means of multiplying this stock; and the Approved hatchery, which acts as the distributing agency. Most Approved flocks are headed by R.O.P. male birds, but very few of the females in these flocks can boast of very much R.O.P. breeding, at least insofar as being able to identify it as such. Much of the outstanding R.O.P. female stock becomes lost because it does not always find its way into the Approved flock.

The new chick grade provides a source of female breeding stock of known breeding, made available to Approved flock owners at a reasonable cost. Such a replacement program is economically sound, because R.O.P. stock should be capable of producing more eggs than stock of unknown breeding. The idea of the R.O.P.-pullet chick may not catch on this year, but at least the R.O.P. breeders are foresighted enough to be ready to supply this class of stock, if and when the occasion arises.

The Canadian Poultry Council

NE of the most important developments of the poultry industry took place in Saskatoon last October. This event was the formation of the National Poultry Council. At that time representatives of all provinces except the Maritimes met, and out of their discussions came the provisional organization which has been working out the permanent framework of an active organization.

Today this council is vigorously tackling the problems confronting the industry. Never before have the poultry men of the Dominion been able to speak with a unified voice. True, there were provincial councils or boards, but their field was mostly confined to local problems. The present council consists of nine directors: One director from each province chosen by the provincial industry committee. The objects as set forth in the constitution provide plenty of scope for useful service. For example, the council proposes to assist in planning long-term programs for the production of eggs and poultry meat, along with setting up efficient marketing agencies to effectively market these products. They also function as a consultative body regarding legislation, research programs and any other matter tending towards the improvement and stabilization of the poultry industry in Canada. Its success will depend upon the amount of support given to it by producers, hatcherymen, produce dealers, feed manufacturers and administrators.



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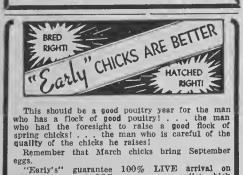
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Turkey Eggs for the Hatcheries

Restrictions on American imports raises the importance of a supply of domestic eggs to feed the growing hatchery business in day-old poults

By R. M. BLAKELY

hatching and sale of day-old turkey poults has become evident during recent years. This phase of the turkey industry is expected to develop more rapidly during the next few years and will bring about certain changes in turkey raising methods. Artificial brooding will become more general. It will be possible to procure poults of a uniform age at an early enough date to ensure them being finished in time for market. The smaller, individually owned, breeding flocks, which are now to be found on many farms, will tend to disappear and their place will be taken by larger hatching egg flocks.

The management of turkey hatching egg flocks, the possible egg production and the methods of handling and shipping hatching eggs are comparatively new to the prairies. The purpose of this article is to outline some of the most important points in such a program.

Turkey flocks maintained for the purpose of selling hatching eggs for the commercial sale of poults must come under the Approved Turkey Flock policy of the province in which they reside if such a policy is in force. The purpose of this is to guarantee the quality of the parent stock and probable vitality of the poults. Inquiries in this regard should be addressed to the Department of Agriculture of the province in which the breeder resides.

It has been recognized that shelters for the rearing of market turkeys need not be elaborate so long as they provide protection from storms. However, buildings for the housing of a flock of breeders need more attention. This is especially true of flocks which are to be brought into production early in the season. There is some evidence to indicate that fertility may be impaired by low temperatures just prior to the hens commencing to lay. Buildings which provide a uniform moderate temperature are recommended. An outdoor run is advisable but is not always possible. If breeders are to be totally confined they should be given at least nine square feet per bird and preferably more. This should be exclusive of nests and large obstructions.

UNDER these conditions care should be taken to see that the building is sufficiently well ventilated to remove odors and keep the litter dry. It is important, also, to remove all obstructions such as partial partitions, which would interfere with mating. The entire floor area should be as clear as possible of drinking pans and feed hoppers.

Very simple types of feed troughs six inches wide and eight inches deep, with a lip to prevent waste, can be fastened to the wall. They can be placed with the top approximately 12 inches above the floor. Nests are best constructed of the community type with no partitions between nests. They are often placed along the back wall and are darkened by hanging sacking down the front. Breeding stock can be confined to a tenced area using four foot poultry netting if one wing of each hen is clipped quite short. It is not advisable to clip the wings of the male.

A vigorous young male can be mated with 10 to 12 females. In mass mated flocks, of larger numbers, this same ratio should be maintained. Where two toms only are placed in a pen it may be advisable to alternate them each half day or day about. Larger numbers of males do not seem to interfere as much as when only two are present.

All toms should have their toe nails clipped and filed round. Even this practice will not guarantee that some hens will not be torn during mating.

NTEREST in the commercial To overcome this, many breeders place a mating saddle on each hen when the breeding season approaches. Hens which are allowed to come into production in the normal season will usually commence to lay about April first. Toms should be placed with these flocks by March first. If artificial lights are used the hens should be mated when the lighting of the pens is commenced. Research indicates that toms should be placed under lights two weeks in advance of the hens.

> IT is a well recognized fact that the diet fed to the turkey hen has a definite influence upon the ability of her eggs to hatch and the poults to live after hatching. Hatching eggs are paid for on a hatchability basis and it is therefore of prime concern to the breeder to obtain high hatchability.

Inheritance plays an important part in hatchability but management and diet are also very important. It takes the turkey hen from four to six weeks to prepare for egg laying. This is an important period and her diet should include all of the ingredients necessary to produce hatchable eggs. The ingredients which bear upon hatchability are a variety of proteins of the proper quality, Vitamin "A," Vitamin "G," and Vitamin "D." Turkey breeders require larger amounts of these items than chickens. For this reason the ordinary chicken breeder mash should be fortified with additional fish oil and greenfeed such as alfalfa meal.

Milk also should be given for drinking where available. A warm, wet mash daily to which is added a few tablespoons of fish oil and extra greenfeed, such as alfalfa meal, is an excellent way to supply the extra ingredients. Special turkey breeder concentrates are being sold by some firms. The feeding of a little extra fish oil and milk with these may be well worth while also. Small hoppers of whole flake oyster shell should be available to the birds.

Eggs should be collected often enough to prevent undue chilling and should be stored at a temperature of approximately 55 degrees. Small eggs as well as oversized eggs should be discarded. Those with weak, porous shells should also be discarded since they seldom hatch. Special turkey egg fillers can be purchased which fit the standard egg case and hold 200 eggs per case. They are much more satisfactory than trying to use the ordinary filler.

The number of eggs to expect from a flock of breeders depends partly upon their inherited ability to lay, the amount of broodiness which develops and the management of the flock. Profits from the sale of hatching eggs will be made largely from the eggs which are laid early in the season. Late hatched poults are not in demand.

The modern turkey breeder is attempting to develop strains which are comparatively free of broodiness. Hens which spend long periods in broodiness cannot produce many hatching eggs. Broody hens if picked out of the nests as soon as they show signs of broodiness can be broken up and will return to laying. They can be placed in slat bottomed broody coops but should be fed and watered well. If broody coops are not available they should be segregated in a special pen with the surplus toms. Four days is often long enough to break them.

Breeders which are placed under lights usually commence to lay within three weeks. They will produce a few more total eggs under these conditions.

(Mr. Blakely is assistant poultry husbandman at the Swift Current Experiment Station).



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REWARD --- WITH COSTS

Continued from page 10

ward, Joe," he said over his shoulder. Great-Uncle said nothing. He stood watching Gus retreat along the fields and pasture toward his own farm. When Gus was almost at the boundary fence, he turned abruptly toward Stone's Pocket.

"He ain't goin' home," said Great-Uncle. "I be dog if he ain't up t' something." He turned to me. "Ol' Timer, I guess it's up t' you and t' me t' see he don't come t' no harm. We better foller him."

"Not with supper on," protested Great-Aunt.

'Now, Lou," said Great-Uncle placatingly. "Don't go gettin' your dander up. C'mon, Ol' Timer."

He strode away in the face of my hesitation.

"Go along," said Great-Aunt. "Go along and keep your eyes on that fool man a mine. He's up to no good."

We got up to Stone's Pocket without catching sight of Gus, but saw him again on the far side, across the brook, heading hurriedly back toward his house to the northeast. Great-Uncle paused thoughtfully.

"He's forgot somethin,' that's what," he guessed at last. "We'd best wait a bit. He'll be back along this way, or I miss my guess."

HE sat down against the bole of an ancient oak. Dusk was deepening, and the wooded slopes were still but for the occasional cry of a jay and the scuttering sound of a squirrel or rabbit running among the leaves. Above us, the oak still carried most of its leaves, and the rising wind rustled dryly among them. Far down along the river, the lights of Sac Prairie came on, and here and there in the countryside yellow squares came into being at scattered farms.

Gus came running along the ridge and dipped into the Pocket. Great-Uncle smiled to see his awkward lope, his baggy overalls and his felt hat with the yellow hair sticking out through countless tears and cracks. Gus was carrying a shotgun, which Great-Uncle did not at first see because Gus held it close to his body.

"Shotgun by damn!" Great-Uncle exclaimed in a muffled voice, seeing suddenly. "I reckon Gus did see somebody."

We started after him, careful to keep out of sight. Gus followed the brook for some distance along the Pocket, but cut up finally past Stone's house.

"I be dog if he ain't headin' for Skunk Holler!" said Great-Uncle. "There's somebody in that cave there. But it's a cinch Gus can't edge him out. Not by hisself, he can't."

SKUNK HOLLOW was a small pocket almost isolated in the midst of an expanse of fields set away from the northwest end of Stone's Pocket. It was heavily wooded, overgrown alike by low brush and tall, stalwart trees, and deep, with its slopes far too steep for cultivation. Its shape was that of a horseshoe, with the cave half-way down one side. The only feasible and easy entrance to the Hollow was at the north end, where it opened out into a shallow meadow.

Gus did not at once descend to this meadow—a maneuver which puzzled Great-Uncle. Instead, he skirted the ridge until he came to the round end of the horseshoe. Great-Uncle paused and watched him, though it was difficult to see what Gus might be doing, for the last afterglow was a thin line along the western sky, and Gus only a

more solid shadow standing there among the trees.

But we were not left long in doubt. At Gus's feet suddenly a thin, wavering yellow flame sprang up; in a few moments the wind had caught it, spread it among the leaves, and the sides of the horseshoe were being devoured by the growing fire.

"That damn fool's settin' the Holler afire!" exclaimed Great-Uncle.

Gus passed within 20 feet, but missed seeing us. He ran clumsily over to the edge of the Hollow near the meadow, clutching his shotgun tightly to him. Over the edge he went; judging by the noise he made, he might have rolled down the slope.

"We better git behind Gus," speculated Great-Uncle, eyeing the spreading fiames. "The fire'll eat up the Holler, all right."

The fire was indeed spreading swiftly before the wind. It was creeping along the ridge on both sides and down into the Pocket, following the outlines of the Hollow. Smoke began to cloud up into the night sky. Great-Uncle went along the ridge until he saw Gus standing in the Hollow's narrow neck. Then he began to chuckle, his heavy form shaking with suppressed mirth.

"I be dog if he ain't a-smokin' him out!" he exclaimed. "That's what he's aimin' t' do. I reckon it'll work, too."

We went cautiously down the slope to the meadow and crouched behind a grove of hawthorn bushes not far from Gus, though upward a little on the slope. Gus held his shotgun as if in readiness to charge into the Hollow's smoky darkness, now glowing redly from flames licking upward. Both Great-Uncle and I found the black mouth of the cave, and watched it for any movement. Gus stood motionless, also just hidden from the sight of anyone coming from the Hollow.

"That smoke mus' be near smotherin' in that cave," murmured Great-Uncle. "There he comes!"

A dark figure had come running from the cave's mouth. He was lost for a moment in the smoke, but his footsteps sounded above the crackling of the flames. We took our eyes off the cave to watch Gus.

Gus had heard, too, and now stood alert.

"I bet he gits so scared he fires first," said Great-Uncle, grinning.

But what actually happened was far stranger. The figure came on toward Gus, and Gus was just ready to leap out into the glow of the oncoming flames, when abruptly he ducked back and let the runner pass. Gus bent and stared after him, craning his neck to

'That aint' no man," said Great-Uncle, mystified. "More like a boy."

We looked back toward Gus and saw him once more alert and waiting. At the same instant the smoke gave out another figure, and the same maneuvers were repeated. This time it was clear why.

"I like t' die if that ain't a girl!" exclaimed Great-Uncle.

"And there goes another one," I said.

On top of all this, we heard Gus's voice ringing out.

"Put up your hands, feller. Step lively now. I don't aim t' git smoked up, Nor burnt, either."

"Maybe we'd better lend him a hand," I said in a whisper to Great-Uncle.

Great-Uncle shook his head. "He's the one been doin' the braggin'. And likely, if he's got that robber, we'll be havin' t' hear about it year in, and year out. Let him alone—that feller might git away and we'd have the laff on him."

WE set out for Stone's Pocket, Great-Uncle walking as swiftly as his bulk allowed. Night had closed down, and in the clear sky the stars shone, the Seven Brothers and Aldebaran's red eye rising in the east, the Northern Cross sloping down the west above a reddening rind of moon. The air was crisp, with the feel of frost in it, and smoke from the fire in the Hollow had spread over the countryside, thinned and sweet to smell. We cut through a large field of cornstacks, Great-Uncle stumbling over the stubble and once falling over a small pumpkin he did not see.

When we came to the end of the Pocket, Great-Uncle paused, stroking moustache gently with one finger.

"I reckon we ought t' see if Gus's back, Ol' Timer," he said. "We could jest look inta his window."

We cut up along the Pocket into Gus Elker's fields, and came out presently into his bare orchard, from where we could see the windows of his kitchen and living-room. There was light in both rooms, and even as we paused, we saw the unmistakable shadow of Gus pass the kitchen windows.

"Well, he's home," said Great-Uncle. "I reckon it's all over except what we'll have t' be hearin' from him."

He turned, morose now, and went silently back down the fields into his own, down the pasture, and into the farmyard. My great-aunt was still sitting at the supper table, her face forbidding as a thunder cloud on picnic day.

Great-Uncle had supposed that Gus would either telephone or come calling in the course of the evening—"t' brag on hisself for catchin' that robber," he said—but there was no word from Gus. When there was still no word from Gus in the morning, Great-Uncle began to fret. "'Tain't like him," he kept saying. "I'm thinkin' somethin' happened t' him. I'm goin' t' call up his house. I aim t' find out what's got inta him."

I looked over beyond the Pocket. The buildings on Gus Elker's farm were not visible, but there was a thin wisp of violet smoke rising into the sunbright morning from beyond the massed trees. At any rate, somebody had built a fire in the house that morning, and Great-Uncle's fears for Gus's physical well-being were groundless.

When Great-Uncle came back, he looked puzzled instead of worried.

"He's gone t' Baraboo," he said. "I don't see no call for him t' go t' Baraboo, unless it's t' turn that robber in. Seems that's amighty risky, thing t' do. He could phone up a lot easier and get Alec Hoopes out, or the sheriff. Man and boy. I'm knowin' Gus, and I still can't figger that man out."

WHILE we were sitting at table that noon, after dinner, Gus came. The day had grown so warm that the door stood open, and Gus was in the room before anyone had seen him come.

"Hello, all," he said.

Great-Uncle narrowed his eyes and glared at him. "Hear you was in Baraboo."

"Had business," said Gus. "I got a new tenant on the Spring Green place. Young feller."

Great-Uncle ignored this entirely. "What about that bank robber you was aimin' t' catch?" he asked bluntly.

"Oh, that bank robber," mumbled Gus. He began to look a little sheepish.

"Sure, that bank robber," said Great-Uncle, a note of triumph in his voice. "You said you was goin' t' take him all by yourself, and I'm waitin' t' hear about it."

"Well, sir, I was aimin' t' pick him up las' night, and I set out up Skunk Holler way, and be dog if I didn't come on fire in the Holler," said Gus in a rambling manner.

Great-Uncle opened his lips to protest, but thought better of it. "I seen the Holler was afire last night," he said. "I took a look at it. Seems like as if it'd been set."

Gus started. "How you make that out?"

"There's footprints," said Great-Uncle darkly.

"Ain't no harm done," said Gus defensively.

"I reckon not," agreed Great-Uncle. "And the bank robber? What become of him?

Gus looked uncertain, and threw a longing glance at the door. "Well, sir, that bank robber," he began again. "I figgered I seen that red and yellow muffler on a feller campin' in that cave in the Holler, but that fire and that smoke sort a scared him out. Ain't nobody there today."

Great-Aunt looked faintly puzzled. "Then you didn't get that reward,

"No, ma'am, I missed out on it. I sure did. I like t' died when I seen that fire a-goin' in the Holler last night, and that there cave empty."

"I don't guess you could do anythin' with that fire, Gus," said Great-Uncle casually. "Seein' as how you had your shotgun along."

"Yes, there was that shotgun," said Gus, then stopped short, looking askance at Great-Uncle. "What you knowin' 'bout my shotgun, Joe Stoll?" he demanded.

Great-Uncle looked faintly surprised, his heavy face the picture of innocence. "You said you was a-goin' after that robber, didn' you?" he asked "You'd sure taken your gun!"

Gus was disconcerted, but his suspicions had been aroused and were not allayed. "Sure I took my gun," he said. and got up.

"Don't go, Gus," said Great-Aunt. "Set a bit."

"No, ma'am, I got work t' do," replied Gus. "Thanks. I better git a move on me. I jest thought I'd come t' let Joe here know about that robber seein' as how he was so all-fired afraid I might git me that two hundred fifty."

He went out, stamped across the porch, and away up the pasture. Great-Uncle looked speculatively after him, and Great-Aunt likewise, one arm akimbo, one hand pulling her spectacles down for her to look over and out the window.

"He's keepin' somethin' back," said Great-Uncle.

"He does look suspicious," agreed Great-Aunt. "I hope you ain't had nothin' t' do with it, Joe Stoll." She looked at him for a moment, her eyes screwed up, and her mouth firming into a stern line. "You didn't set the Holler afire, did you, now?"

Great-Uncle looked at her indignantly, brief anger sputtering from his lips. "Me? Me set that Holler afire?" He turned to me, spreading his hands and lifting his eyes to the ceiling, "Ain't that jest like that woman a mine, Ol' Timer!"

THAT afternoon we went back into the corn field, working up and down. Close upon four o'clock, Gus Elker came straggling into the field, his brows cloudy, his eyes evading Great-Uncle's. He had something on his mind but was loath to speak of it, for he talked briefly about the dryness of the soil and the possibility of rain.

When we reached that part of the long field close to the highway, Great-Uncle called a halt and went over to lean restfully on the old rail fence. "Something's itchin' you, Gus," he said. "I c'n tell it."

Gus looked away down the road, along which a car was dusting toward us. "Looks like Alec Hoopes," he said.

The deputy sheriff drove up and stopped. Great-Uncle turned lazily and looked at him from under the brim of his black hat. Hoopes got out of the car and came over to the maple tree on which the reward poster had been tacked the previous day.



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Please send me the pamphlet explaining the Canadian Wheat Board Act and its Amendments. I want to know how the Act affects me.

FULL NAME

(Print in Block Letters)

11

FULL ADDRESS

"Hello, Alec," said Great-Uncle.

Hoopes nodded. "Fine day," he said. He glanced past Great-Uncle and smiled sourly at Gus. He went up to the tree and stood looking at the poster for a moment. Then he reached up and tore it off, ripped it twice across, and dropped it by the roadside.

"That feller been caught?" inquired Great-Uncle, surprised.

Hoopes turned to look darkly at him, his bushy black brows converging upon his hooked nose in a deep frown. His gaze wavered to Gus and back again. "You pullin' my leg, Joe Stoll?"

"Sure not," protested Great-Uncle.

Hoopes began to laugh sarcastically. "I knew these parts was backwoods, but I didn't calculate they was as bad as all that. You jest ask Gus Elker there what he done with that robber."

Then he snorted and turned to get into his car. He looked back once, his hawk-like face hard with disapproval, and drove away in a flurry of dust, as he had come.

Great-Uncle turned to Gus.

Gus Elker's face wore an expression of almost ludicrous sadness; the taciturnity had gone from it, and the trouble in his lowered brows had taken over all his features. There was a faint red flush fanning out beyond his droll half-moon of moustache. He was uneasy under Great-Uncle's eyes.

"You holdin' out on us?" asked Great-Uncle in a voice the mildness of which belied the deep suspicion manifest in his eyes. "You got that robber, Gus?"

Gus nodded, his eyes briefly meeting Great-Uncle's.

"And the reward? How much you git?"

"I didn't get it," said Gus flatly.

Great-Uncle looked at him in amazement. "You ain't aimin' t' tell me you ain't taken that reward, Gus Elker! I don't see you givin' up money like that."

"It was that woman and them kids," said Gus, with a kind of despairing violence. "The way she looked at me las' night; I be dog if she didn't put me in mind of my niece, Annie. She had real purty eyes."

Great-Uncle fixed Gus Elker's eyes with his own. "What're you talkin' about?"

"That robber," said Gus, his spirit rising. "What you think? I went up t' Skunk Holler las' night and got him out a' there. Joe, I like t' died, I never been so took in all my born days, if that feller didn't have his hull family a-livin' in that cave with him. And they all come out, one after another, until he come, and then I had 'em, and I took and marched all four over t' my place and set 'em down till I could call up the sheriff. But that woman, she looked at me, near cryin' she was, and she beg me not t' do it. 'I tol' him we'd

starve first,' she kept sayin', and Joe, I ain't the heart t' call the sheriff and all till I hears what he has t' say."

GUS was speaking now as if in defense, his words coming rapidly. Great-Uncle stood listening, braced for whatever might come.

"This feller he been so long outa work, he had t' get money some place t' keep them kids a his and that woman. But he didn't hol' up the bank atall, only the cashier personal, that Clint Hardy, and it come out Hardy owed this feller's pa some money a piece back and claimed he didn't have t' pay it because the old man was dead a good many years. Was only about seventyseven dollars, all told- and that's all this feller took off'n Hardy. That don't make it a bank robbery, and I seen it right off. And all the time them kids and the woman was a-sittin' there bigeyed and scared. So I didn't call the sheriff."

"They wouldn't of took down them signs if the sheriff didn' know," said Great-Uncle. "What you do with that feller?"

"I tol' you," said Gus. "He's on my Spring Green farm. I up and took him t' see the distric' attorney this morning, and I says t' him if he let that feller off on my bond, I'd pay back the money he stole and give him a chance t' farm. The distric' attorney and that feller and me went down t' see them Lone Rock bankers and they was agreeable. So I done it. I rented that feller my Spring Green farm and I'm goin' parts on the produce."

Great-Uncle looked at him a little strangely and asked gently, "And who's keepin' 'em the winter? Ain't no produce t' be had now."

Gus hitched up his too-large overalls and looked fiercely into the heavens. "I figgered it wouldn't cost much."

A kind of helplessness seemed to come over Great-Uncle. He shifted away from the fence and coughed loudly, waiting for Gus to swing his eyes around and look at him. Presently Gus turned a little and glanced quizzically to him, his lugubrious face touched with a strange quality, like that of a small boy caught in mischief.

Great-Uncle did his best to seem casual. "I don' see no wrong in that," he said simply. "Only, seein' es how we always been friends, I don' see no call for you t' carry that young feller and his family all by yourself. Even if you did smoke 'em out! I reckon you and me better go fifty-fifty on it."

Gus only nodded, his uncertainty slipping from him. He began to grin, and said, "Joe, if on'y you know how I felt when I seen them kids and that woman a-comin' from that cave in Skunk Holler last night!"

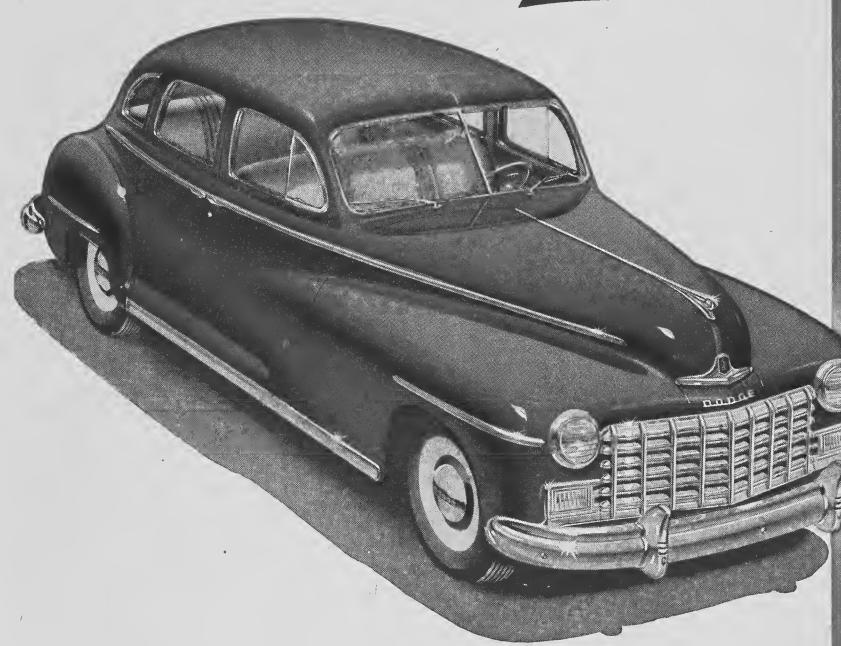
Great-Uncle chuckled and said, "I bet."



"Of course I think you should wear your dresses longer—you've been discarding them entirely too soon in the past."

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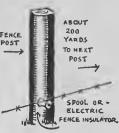
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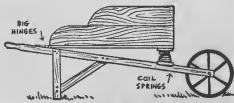


About 200 yards of barbed wire can be stretched at one time if a spool is nailed on the post at about 200-yard intervals. Spools SPOOL OR Should be high ELECTRIC enough to prevent the wire from

touching the ground while stretching it with a pulley stretcher. This will prevent friction and will make the wire nearly as tight at the opposite end of the stretcher. If no spool is available an electric fence insulator will do .- P. T.

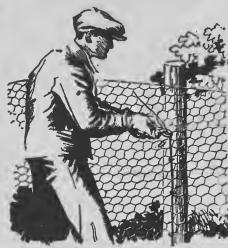
Wheelbarrow on Springs

MODERNIZE your wheelbarrow so that it will run more easily over rough roads or small obstacles. Avoid jolting and make it easier to handle with heavy loads by placing three or



four coiled springs nailed on a crossboard under the front part of the barrow as shown in the drawing. Strong bed springs or valve springs from old tractors are satisfactory.-L. G.

Fastening Chicken Netting



It is a mistake to staple chickenwire directly on to the posts, especially if it will ever have to be removed. Instead take a piece of straight wire and staple it on over the netting. Then when you have to remove the netting you can pull the staples by pulling on the wire. Credit is given to Popular Mechanics for the

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Since stretcher chains for a grain wagon box are hard to get, one was made for a new wagon box out of an old, discarded automobile mud chain. It works as well and is much stronger than the light chains one buys. These are



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detachable chains to reinforce the box and are fastened just before loading. The fastening hook of the mud chain is used as a fastener for the stretcher chain. The other ends of the two pieces of chain are bolted to the inside of the wagon box.—Paul Tremblay.

To Remove Shingles from the Roof

Here is the quickest and easiest way of tearing shingles down from a roof. You can tear off the shingles of a house 100x40 feet in three-quarters of an hour. Moreover, the shingles can be used again. Drill a half-inch hole in each end of an eight-foot, 11/2-inch round hardwood board. To each end fix

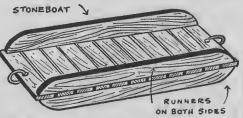
a small clevis attached to a half-inch cable. Each cable should be long enough to reach from the lower edge of the roof, up over the peak and down to the



ground at pulling distance from the building. Make a loop at the ground end of each cable and fasten to the drawbar of tractor, or doubletrees. (If a team is used, the swath must be reduced to six feet or less.) To operate, make a path with a shovel along one sloping edge of the roof, and every eight feet so that the cable will slip straight up. Also, pry up shingles along the lower edge and insert the 11/2-inch found shaft. With a hayrack under the edge of the roof, a steady pull will loosen the shingles and allow them to fall into the rack.—Peter L. Mandel.

A Double Stone Boat

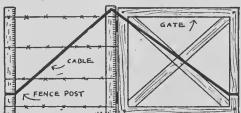
YOU can get much more satisfaction and easier handling from a stone boat if it works any way it happens to lie, upside down or end to end. The drawing shows a stone boat with run-



ners top and bottom on each side, and equipped to pull from either end. Made in this way, it can be tipped over and the contents dumped, and pulled away in whatever position it happens to fall. The set of runners not in use is useful in helping to keep small or loose material from falling off.-L. G.

Keeps Gate From Sagging

GATE of any length will sag before A long due to the continuous weight and frequent strain on the hinges. To remove weight from the hinges and prevent sagging, fasten a cable to the lower part of the gate farthest from the



post, carry upwards to the top of the post, then diagonally downward to a corresponding position on the post next to the gate post. This will not interfere with the opening of the gate, and fastening it to the post next to the gate post, strengthens the latter.—A. S.

Wire Tub Handles



To put a practicable pair of handles on that handleless tub or basket is easy. Make two wooden handles from an old broomstick, by cutting two four-

inch lengths and drilling a hole lengthwise through each. String the handles on a piece of strong wire a little longer than the circumference of the tub. Splice the two ends of the wire, slip the ring thus made under the rim of the tub or basket. Place the handles opposite each other and twist each handle until the wire is tight enough to carry the tub loaded .- Albert Loisch. | Winnipeg

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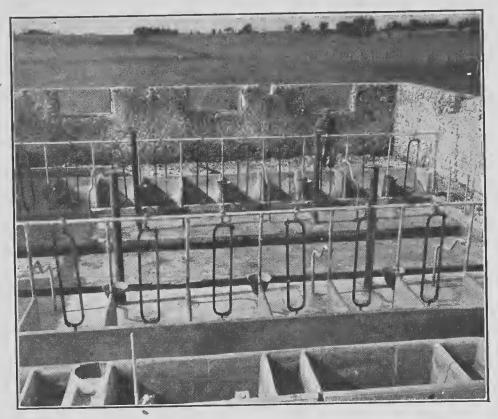
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Fire Resistant Barn Foundations

Steel columns unsupported by concrete buckle in heat, but these concrete filled columns stood up



Mr. Trask's barn after the debris from the fire had been cleared away.

EVERY year lightning takes its toll on the farms of Canada. Scarcely a summer's storm passes without recording destruction of barns and buildings and loss of stock, feed and implements. Steel supporting columns, when filled with concrete, have often permitted stock to be safely moved and saved; steel stable equipment, concrete floors, as well as foundation walls, by holding the load of burning mows until fire burned itself out.

Just this happened when last August the barn of Herb Trask, on the Elora-Alma highway not far from Fergus, Ont., was struck by lightning and burned to the foundations. About 10 years ago, Mr. Trask installed steel stalls, stanchions and waterbowls in his barn. The barn already had steel

supporting columns, concrete filled. When the fire had burned itself out carpenters were soon on the job erecting a new barn 40 feet by 60 feet on the foundations of the old barn.

Asked about the steel equipment in the stable under the barn, Mr. Trask pointed to the newly-painted stalls, stanchions, waterbowls and supporting columns and said he had not needed to spend one cent on replacements to equipment after the fire. Even springs in the stanchions had not lost their tension and not a spring was replaced. The barn builder said that in 20 years of barn building he never saw stable equipment come through a fire with as little damage and was loud in his praise of steel supporting columns.



The new barn raised by Mr. Trask on the foundations of the old.

Abbott Refuses Beet Growers' Petition

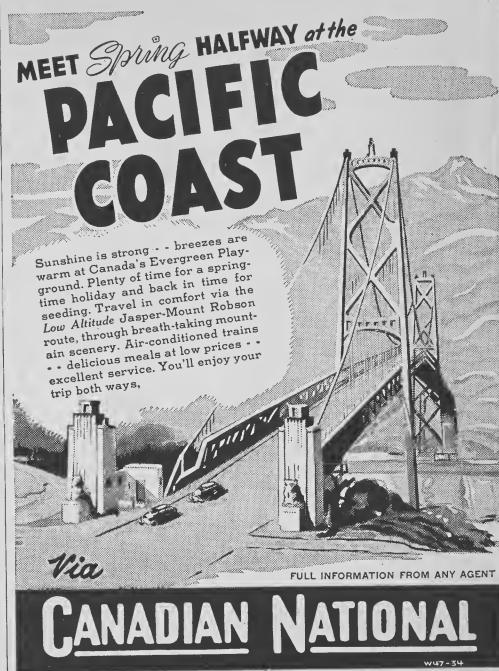
Growers' secretary declares domestic product discriminated against

APROPOS of the article on a national sugar policy elsewhere in this issue. The Guide reprints a news item emanating from Chatham, Ontario, as we go to press. It is issued by Chas. Gladman, secretary of the Canadian Beet Growers' Association, and deals with recommendations made through him to Hon. D. C. Abbott, minister of finance.

In two letters to Mr. Gladman, Mr. Abbott refuses to adopt the beet growers' proposals on the grounds that they

are founded on false premises. "We have no recourse," says Mr. Gladman, "than to tell just what the government decision means to beet growers."

The government, it is claimed, as the sole importer of raw sugar is subsidizing foreign sugar to the extent of 19 cents per cwt. As refined sugars are all sold at the same price domestic beet sugar is being deprived of 19 cents per cwt., which is equivalent to a loss of 50 cents on every ton of beets sold by growers.





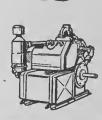
operating a pick-up baler, combine, torage harvester, feed grinder, meat and bone chopper or any one of a great many power-operated farm machines and you will be sure of one thing: the Wisconsin Engine will deliver the Most Horsepower Hours of on-the-job service, at the lowest operating and maintenance cost.

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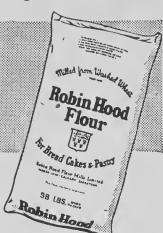
Robin Hood

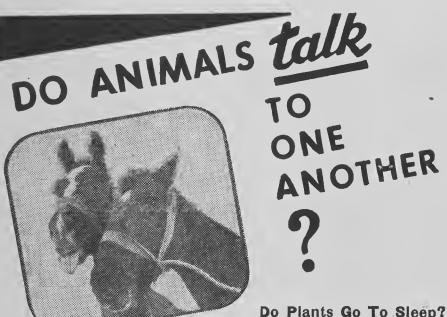
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FARM POOCHES

Continued from page 8

city cousins. Distemper, the scourge of dogdom, is the dread disease which spreads so rapidly throughout towns and cities where dogs are in close contact with one another. The isolated farm dog, while not immune to the disease, often escapes because he is removed from contagion—another reason why farmers should leave their dogs at home when they go to town. Inoculation against distemper by a qualified veterinarian is the only effective safeguard against this terrible disease, and such inoculations are well worth the small expenditure required.

FARM dogs enjoy a healthier diet than city canines as a rule, hence rarely need to be dosed for intestinal worms. However, worm capsules are quite inexpensive, and it is a wise precaution to keep a few of the small-sized ones on hand in case your dog reveals the typical worm-infested symptoms—bloated abdomen, dry and feverish nose and a foul breath, watery and offensive bowel movements, and a habit of biting at the root of the tail.

Another common dog ailment should be mentioned; ear canker. Early symptoms are hot, dry, and red-colored ear linings at which the dog scratches continually. Advanced cases reveal a yellow pus-matter, very offensive in odor. Treatment consists of thoroughly cleaning the affected ear, using swabs of cotton and taking care not to injure the ear drum. After each cleansing douse the ear cavity with boracic powder, repeating this treatment once a day until the dog is cured.

Investigation among farm dog-owners reveals that the standard home remedy for dog ills is a spoonful of sulphur disguised in fat or butter and coaxed down the throat of the ailing animal. Such a dose is undoubtedly a good tonic for any dog that is suffering from a blood disorder or is severely constipated. Some dogs actually like the sulphur, but in most cases it has to be well disguised inside a ball of fat—just as we used to take our spring sulphur tonic well covered with molasses when we were youngsters.

A COMPLETE list of dog ailments cannot be given here, but perhaps it would be in order to mention two special troubles farm dogs are apt to suffer. Canines that live on farms adjacent to woodlands often come home with a muzzle generously decorated with porcupine quills. And how patient they stand, hardly wincing while a man uses pliers to yank out the cruel quill-spears!

There is an easy way to pull the quills, one that reduces the painfulness of the operation. Use a pair of scissors to clip off the back ends of the quills before starting to pull them—I've never been able to obtain a satisfactory explanation as to what this clipping actually does to a porcupine quill, but I do know from experience that it makes quill-pulling much easier and causes less pain to the victim.

If you have the ingredients handy, another good pain-killer before performing the quill-pulling operation is to douse the affected parts with a solution made by mixing a tablespoonful of vinegar in a cup of water. Be careful to keep this mixture out of the dog's eyes and nostrils. The vinegar-water mixture takes the sting out of the quill-pulling, while the scissor clipping stunt makes the pulling much easier.

Another troublesome matter many a farmer's dog has to endure periodically is the business of being "skunked." Usually the affected dog is barred from the kitchen and from any social con-

tact with the family until the potent perfume wears off. But there is a simple method of getting rid of the smell. Use the contents of a can of ordinary tomato juice, swabbing it on the part of the dog that was sprayed by the skunk. Tomato juice neutralizes the skunk odor at once and makes Fido a much happier dog.

The same vinegar solution mentioned for porcupine quill treatment is also claimed to destroy the skunk smell, but I have never tried this and cannot vouch for its efficiency. The tomato juice remedy has been used several times by myself and friends, and can be strongly recommended for use the next time your dog needs de-skunking.

The farm dog often becomes a carchaser, much to the annoyance of its master. This habit can be cured, however, especially if the offender is a young dog and the habit is not yet well established. A gunny sack is the important equipment necessary to work a cure, plus a car and a friendly neighbor. Attach the gunny sack to the back wheel of the neighbor's car on the side which the dog is apt to attack, then have the neighbor drive slowly past your gate and allow your dog to chase and overtake the car. The animal will probably bite at the back wheel; if it does so, the teeth will contact the gunny sacking and sink into it. The revolving wheel, whirling the sack, will promptly roll the dog over in the roadway a few times and give him the scare of his life. One such lesson is usually enough; chasing cars isn't nearly so attractive from then on.

A more humane cure, but not quite so effective, is to have a neighbor drive by with a person in the back seat ready with a pail full of cold water. Douse the head of the chasing dog, giving it the whole pailful in one gasping deluge. Usually the dog will studiously avoid cars from then on.

A few farmers own vicious dogs. Sometimes this is their own fault, the viciousness brought about by too much mock-fighting with the dog while it was a puppy. You've no doubt watched this mock-fight procedure, and may have noticed that after too much of it the puppy gets quite exasperated and really means its snarls and bites. Some men and boys think that such realistic behavior on the puppy's part is quite comical to watch, but when they persist in teasing the puppy and prodding it into frustrated anger, they are laying the foundations of character which may turn out a vicious dog.

But some dogs are naturally vicious. Of course, such animals will rarely bother the farmer himself nor any member of the family, but the dog will attack any stranger or visitors who approach the farm house. Barking is legitimate—the dog is merely announcing the approach of newcomers. A vicious dog will not content itself with barking; it will snarl and menace every stranger, frequently dashing close and seeking an opportunity to bite.

The owner of such a dog is confronted with a simple ethical problem; is the dog's companionship worth more than the safety and well-being of fellow-humans? Remember, there are criminals or brute types among dogs as well as among mankind, and an offensively vicious dog should be treated as we treat our own criminals; either safely locked up where the animal can do no harm, or else humanely destroyed when it is a serious offender.

FARM dogs are individuals; they have greater freedom in their daily lives than city-raised animals, hence have more opportunity to develop their personalities and usually become better dogs. They'll accept responsibilities cheerfully, but they do love their good times. One moment Sport may be busy at herding in the cows, but the second that chore ends he is quite willing to be hailed into playful service by young

Jimmy and hitched to sleigh or wagon and told to Gee and Haw and Mush.

Another dog may like to spend all its free time in the company of some farm animal—a horse, cow, goat, or even a cat! An Airedale we owned did its work faithfully and well, but every spare moment during the summer time was spent at digging for gophers—and, so far as we know, he never succeeded in catching one!

One farmer bragged to me that his Irish spaniel knew how to chew gum! Another told me about a fox terrier, called Dink, who loved to get into the long hallway where the floor was always waxed and where a small oval scatter rug was stationed. Dink would take a run and jump, landing on the scatter rug and coasting down the length of the hall on that magic carpet! Then there was Rover — he hated everybody, but with a kind of restrained hatred. He didn't exactly bite people, but he certainly let everyone know that he didn't like them. And his mistress kept apologizing: "It's not his faulthe just doesn't feel sociable."

As for Toby, he was a most efficient poultry herder. Only Toby could never abide a cackling hen. A little cackling was all right, but if a hen kept cackling, Toby would dart close and catch her and unceremoniously carry the squawking bird back to the henhouse and there deposit her, as though to say: "Okay, so you've laid an egg. Now let's

see you lay another!"

And did you hear about the Medicine
Hat farmer who imported a special
fast-running hound called Betsy to
catch a coyote that had killed 20 of his
turkeys? Betsy took after the indicated
coyote speedily enough, but she didn't
come back for some months—then she
had a litter of pups trailing her that
had a definitely coyote cast of feature
about them!

Oh, yes, farm dogs are individuals! They're something more, too. Perhaps some of us appreciate them, and perhaps some of us don't. But that does not matter one particle to the dog. No matter how good nor how bad the master and his family may be, and no matter how wealthy nor how poor, how happy nor how sad, to the devoted dog there is no more wonderful being on all this grand old earth than its beloved master and family. When you look into your own dog's eyes and see this unashamed love and loyalty shining so faithfully there, you can't help feeling humbly grateful that a bountiful Providence created for us the tail-happy miracle called Man's Best Friend.



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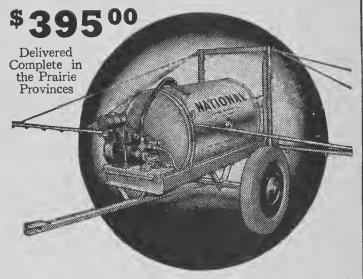
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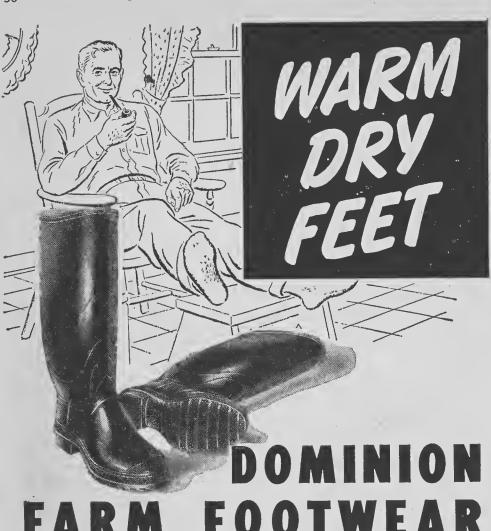


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'DUGOUT' COUNTRY

Continued from page 7

livestock program. Bratvold covered his territory systematically, interesting groups of farmers in good dugouts and encouraging contractors to come in and start work.

ROM Grande Prairie, Jack Stranatka worked early and late over a district 160 miles long by 70 wide, from Valleyview to the British Columbia boundary, and from the Wapiti to Dunvegan, It's not all "dugout" country, of course, but the main centres of activity happened to be around the outer perimeter of his territory.

Late in the winter of 1945, George Shewchuk took over district agriculturist duties in the block between the Saddle and Birch Hills and the Peace, with headquarters at Spirit River. George can tell some stories about winter trips with team and sleigh through snowbound communities to inspect late excavations.

Laurent Gareau, graduate of Saskatoon, and deeply interested in wooded soil development, succeeded Hebert in the district between High Prairie and the Smoky, and has the honor of working amongst the heaviest concentration of dugouts in the north country. It is no exaggeration to state that the block from McLennan to the Smoky River is literally pock-marked with water reservoirs.

To the district agriculturists was allotted the task of measuring up yardage and passing each dugout for bonus payment. So a familiar sight for-the last three summers was the figure in sundry garb, carrying hand level, tape, and measuring rod, clambering up and down the slippery sides of the fresh excavation. But it wasn't always as simple as that. In some of the isolated districts it meant miles of travel over bad roads, opening and closing of numerous barbed wire gates of intricate and devilish design, placating vociferous and hostile canines, and in some cases convincing a suspicious farmer that one was not even remotely connected with the Alaska Highway survey or the Income Tax Branch.

Due to the extent of the territory, it was impossible to keep pace with excavation in every district, and this meant that a percentage of the dugouts were filled with water before they could be measured. The problem of securing the depth measurement was a vital one, as the policy stipulated that 10 feet was the minimum. This was a simple calculation in a dry hole, but let a 160 by 60-foot dugout fill with water, and depth becomes a guessing contest. The public treasury has never been prone to accept guessing as a basis for subsidy payments, so the now famous "lie-detector" of Peace River dugout fame, made its appearance.

LIOW the term came into use no one knows, but it certainly was not intended to cast doubt on the veracity of anyone concerned. It was the brainchild of P.F.R.A. engineers in Saskatchewan, and was tracked to its lair by F. R. Burfield, chief engineer of Alberta Water Resources, Assistant Frank Grindley ably initiated its first plunge into Alberta waters in an experimental try-out at Whitemud Creek, near Edmonton. At its best, the "lie-detector" could be called only a contraption, but it served its purpose well and saved much fruitless argument.

In brief, it consisted of three sections of light bamboo (undoubtedly made from discarded binder whips) fitting into each other to make a total length of 12 or 14 feet. This slender rod, graduated in feet, was attached at its base to a heavy iron shoe turned up in front. The "detector" was immersed in the dugout and the shoe, serving as an anchor, stayed on the bottom. By means of a light rope attached to the front of the shoe, it was drawn across the bottom of the excavation, the rod being kept erect by floats. It thus gave a reasonably accurate check of depth at all points.

Whatever doubts may have been expressed from scientific sources as to its accuracy, the "detector" seemed to impress farmers with dugouts to measure. There is no virtue here in recounting the minor mishaps that occurred at odd times. In a three-day campaign, known later as "Operation Baytree," district agriculturist Hugh Michael, who had taken over Bratvold's territory, supervised the "detector" with the skill of an old craftsman. In due recognition of his quickfooted dexterity, Michael was also appointed chief gate-opener during the manoeuvres.

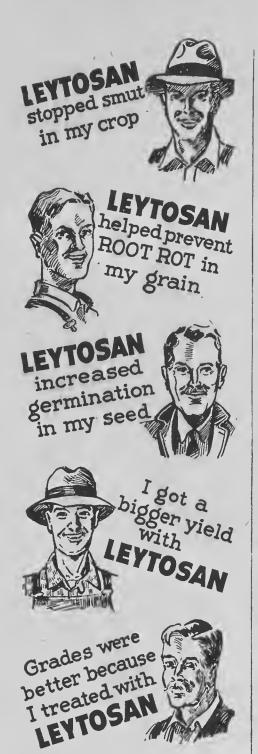
One of the first questions usually asked about the "dugout" country concerns the future possibility of getting good wells by drilling. Recent exploration "test holes" by a number of oil companies investigating the area give ground for encouragement in some districts. No one who wants some really rock-bottom information on the topic of water supply in the Peace should overlook studying Report No. 21 prepared in 1929 by Dr. R. L. Rutherford of the University of Alberta, on the "Geology and Water Resources of the Peace River and Grande Prairie Districts."

T is interesting to note that some districts which formerly depended on dugouts have found that real honestto-goodness well drilling has brought results at reasonable cost. By results we mean good water and lots of it. Teepee Creek farmers report reaching good supplies at between 200 and 300 feet. John Luck, who hails from a mountain ski resort in Switzerland, gives the figure of \$600 as his capital outlay to supply well and equipment complete to the pump handle after the drill hit the 220-foot mark. John figures it's just as important a capital investment as his buildings and his machinery, and he was heartily sick of hauling water. Vern Sorenson, in the Fitzsimmons district south of Kleskun Creek, was jubilant over his drilled well with its good supply of soft water. When asked about his brother Einar's chances for similar luck, Vern thought there might be difficulty-too near the Smoky River gorge. ·

Whether in harmony with the geologist's study of formations or not, these people in the Peace are generally fairly "water wise." Incidentally, Einar Sorenson had one of the best dugouts it was our good fortune to see. Located in a natural depression, well protected by native willows to hold snow and reduce evaporation, with the sides and waste piles seeded down to prevent erosion, it had all the marks of a well planned and finished job. Plans are underway to install a filter well and pump, and most important of all, the reservoir was filled to the brim with water.

Well drilling in the country from McLennan to Rolla has not produced encouraging results to date. Some shallow wells have provided supplies for a short period, but their permanence is doubtful. Other drillings at depths from 300 to 900 feet have brought forth water of low quality, most of it containing high percentages of salt and soda, and the prospects so far are not too bright. Even if good water can be





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secured at these depths the farmer is rather doubtful about the practical economy of such an undertaking.

It would appear safe to make the general statement that dams in water courses have not provided satisfactory reservoirs in the Peace River area. There are, of course, a number of good dams in some of the smaller draws and coulees, but too often an attempt has been made to construct a cheap earthwork in a stream which carries a heavy spring run-off, with disastrous results to the dam. To be of any use for permanent water storage a dam must be well reinforced with rocks and piling, with properly engineered construction throughout and well designed spillway installation. Few farmers are in a position to spend the money required for this type of construction, and one observes too many instances of money and labor lost in dams completely washed out by one heavy rush of water.

Incidentally, damming a stream may bring up the problem of water rights, and few realize the responsibility they must assume should future trouble arise from the flooding of a neighbor's land or interference with somebody else's water. supply.

Among the more encouraging features noted in many projects is the adoption of practical measures for dugout protection. There appears to be a wider realization of the ever-present menace of soil erosion. Farmers are generally quick to profit from their own observation of good methods adopted by neighbors. Possibly no other factor contributed as much to the destruction of a good dugout as the practice of allowing stock free access to the water. The constant trampling along the sides worked silt into the reservoir and the result was obvious. In some cases the capacity could be reduced as much as 25 per cent in three or four years.

THE installation of a seepage or filter well adjacent to the dugout appears to be a very sound recommendation. In most cases the well is connected to the main reservoir by a narrow trench filled to a depth of three or four feet with an assortment of rocks, gravel, and finer aggregate to provide the filtering element. Obviously this is a job which should be undertaken just as soon as the main reservoir is completed. A good many farmers would be interested to hear from anyone who has successfully installed a filter and well after the dugout is full of water.

Of course, no one should go home with the idea that this rather primitive filter will purify the water by exclusion of bacteria that may be present. More elaborate and efficient types of filters may be installed, but even then one would hesitate to express a frank opinion on just how safe some of the water would be for human consumption. Those who have not installed wells appear to be getting good results from a tank pump on a platform with hose or pipe connection. Whatever system is used, it seems to be generally accepted that it is bad business to let the stock help themselves.

So another chapter, albeit a minor one, has been recorded on the steady development of the Peace. We could wisely ask ourselves whether its experiences have not a much wider significance than just the problem of digging a hole to hold a supply of water. Where a district must depend on surface run-off for its water supply, the matter of water conservation needs to be considered on a much broader basis than that of the individual farmer or group of farms. It is definitely a community project and must reach into provincial and even federal fields of control and administration.



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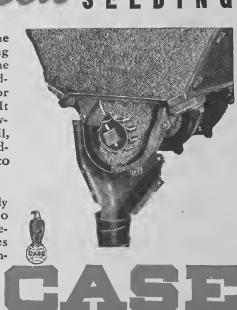
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Harry Ferguson, Inc., 3639 E. Milwaukee, Detroit 11, Mich.



This feature is furnished monthly by United Grain Growers Limited Monthly

The Canadian Federation of Agriculture and the Wheat Agreement

The Canadian Federation of Agriculture has gone on record in connection with the Canada-United Kingdom wheat agreement. The following resolution was passed at the annual meeting of the Canadian Federation of Agriculture in Brockville in January, 1948:

"WHEREAS the Canada-U.K. Wheat Agreement contributes towards the stability which farmers desire;

"THEREFORE BE IT RESOLVED that we go on record as being in favor of the stabilization features of the Canada-U.K. Wheat Agreement."

The resolution was first presented to the Western Agricultural Conference in Winnipeg prior to the annual meeting of the Federation and failed there to get unanimous support. Those in the country who approved the agreement without qualification would probably consider the resolution somewhat halfhearted. Those who dislike the agreement will think even that somewhat cautious wording of the resolution goes too far and that it evades the question as to whether or not the price arrangements in the agreement were satisfac-

The above quoted resolution requires publication to show what is now the official attitude of the Canadian Federation of Agriculture, although that is not necessarily binding on the member bodies. On more than one occasion the board of directors of United Grain Growers Limited has pointed out that neither the Company nor the Federation had been consulted in advance with respect to the agreement nor had either subsequently endorsed it. That statement, so far as the Federation is concerned, now requires some modification, in view of the above quoted resolution which was not concurred in by the United Grain Growers' representative.

The attitude of the Company in this respect was expressed in the Annual Report of the board of directors published in November, 1947, as follows:

"Your Board made it clear that neither this institution nor the Canadian Federation of Agriculture had been consulted in advance with respect to the British wheat agreement, and that this Company accepted no responsibility either for that wheat agreement or for the price guaranteed. It is true that since the agreement was made certain organizations and individuals associated with the Canadian Federation of Agriculture have endorsed it. This Company has not done so, nor has the Federation as a body. In view of conflicting opinions which now prevail among western farmers, no present statement either endorsing or condemning the British agreement could be considered as an authoritative presentation on behalf of farmers. Your own Board would consider it undesirable, in view of that conflict of opinion, to attempt to formulate at this time any such statement. Moreover, it is clear that no satisfactory judgment with respect to the British wheat agreement can at for the present, or until its actual results are determined in the light of price conditions which may prevail until July 31st, 1950. Instead, the working out of the present policy calls for continuing study by producers, so that opinions can be arrived at with respect to the future course of policy."

Participation Certificates Called In

Wheat producers should turn in their Wheat Participation Certificates for the 1946-1947 crop in order to be sure of getting, as promptly as possible, the interim payment which will shortly be made by the Wheat Board. The Wheat Board has issued a call for the return of such certificates which can be turned in at any elevator, and the elevator agent will list them and forward them to the Board.

The Wheat Board already has on hand Participation Certificates for the 1945-1946 crop which were turned in at the time when the first interim payment of 10 cents per bushel was made in respect of that crop, and the initial price basis was increased from the former level of \$1.25 per bushel to \$1.35 per bushel.

Participation Certificates for the 1947-1948 crop should be held by producers until such time as the Wheat Board calls for them.

The present understanding is that payment on the 1945-1946 crop will be made very promptly after Parliament authorizes such action. A Bill is now before Parliament authorizing an increase in the initial payment on wheat and an adjusting payment on deliveries made since August 1, 1945. For a considerable time it was assumed that the new initial price basis would be \$1.55 per bushel and that consequently an adjusting payment of 20 cents per bushel would be made on past deliveries. Recent despatches from Ottawa suggest that perhaps the new basis is to be \$1.60 per bushel, which would make the adjusting payment 25 cents per bushel. By the time this page is read probably announcement will have been made in Parliament.

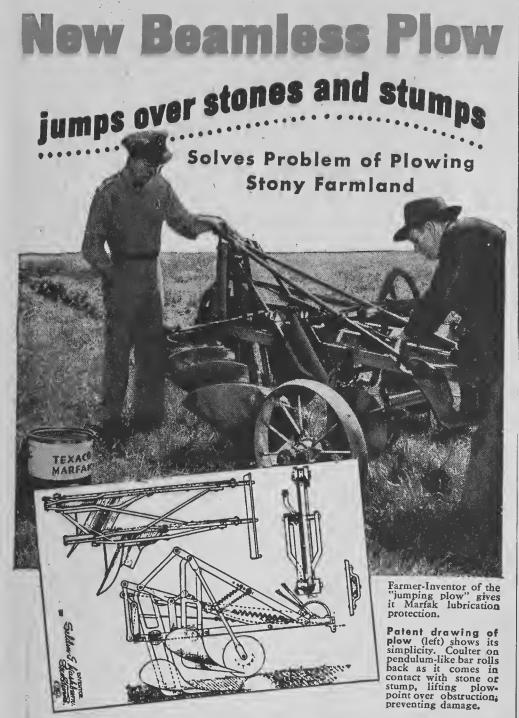
The amount of approximately \$200,-000,000, which is to be paid out to western farmers, will not go out all at once, but instead in three separate payments on wheat, for the three different delivery years involved. Because of the work involved this will probably be spread over a period of several months but undoubtedly an effort will be made to get the first payment out with the least possible delay.

In addition to these three payments on wheat the Wheat Board is shortly to pay an additional amount on oats sold by western farmers during the crop year 1946-1947. In another article there is mentioned the payment to be made on flax which brings to a total of five the number of cheques an individual farmer may expect to receive from the Wheat Board within the next few months.

Export Surplus of Oats and Barley

Why did prices for oats and barley in Canada fall in February when prices went down on markets in the United States? One might have thought that the Canadian market was insulated from United States influence because no exports of oats and barley have been allowed during the current crop year and it might have been expected that the Canadian market, depending only on domestic factors, could remain unaffected. After the price ceiling was removed from oats and barley on October 22 and prices were allowed to rise, they did reach, for a time, levels too high in relation to Canadian livestock prices. That situation was corrected when, after signing of contracts with Great Britain for Canadian bacon, beef, eggs and cheese, prices for livestock and livestock products went up in Canada, Consequently, at the beginning of February, feed grain prices were on a basis that encouraged eastern producers to buy and they were actually buying considerable quantities of western grain.

The subsequent fall in prices, which appears to have been unnecessary, was precipitated as a direct result of the embargo on exports. At one period it had seemed that there might be a deficiency of feed supplies in Canada and



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Commentary

that the domestic market would absorb all oats and barley offered. However, as the season progressed and as large quantities of feed grains were delivered by western farmers, it became apparent that a surplus existed in both of these grains. That surplus, with no export outlet available, became a depressing factor, and would have had its effect in lowering prices even had there been no decline in markets south of the border. Once that situation became apparent United Grain Growers Limited made representations to the government at Ottawa, urging that export permits be issued for a sufficient quantity of oats and barley to relieve the market of the surplus.

Whatever exports of oats and barley have been allowed, during recent years, export permits have been issued by the Canadian Wheat Board with an equalization fee charged to cover the difference between the Canadian price and the price level in the United States. Even when export of whole grain was embargoed, prices were continually quoted for export permits as permits were also issued to cover malt and rolled oats. Canadian maltsters, in fact, were building up a big export business to the United States, although they could not manufacture enough malt to absorb the malting barley that would have gone to the United States had export of grain been permitted. Fees were kept high, frequently over 50 cents per bushel for oats and over \$1.00 per bushel for barley.

With an export surplus available in Canada, it would have been logical to issue export permits and to reduce the fees to a level that would make export practicable. Under such a scheme the natural result of a declining market in the United States would have been not a drop in price of grain but rather a pronounced drop in the fees charged for permits.

Fifty Cents per Bushel More on Flax

An additional payment of 50 cents per bushel is to be made by the Canadian Wheat Board to all producers who have delivered, or will deliver, flax during the current crop year. That will bring the fixed price basis at which the government of Canada buys such flax up to \$5.50 per bushel. It will mean the distribution of an additional six million dollars to flax producers on the twelve million bushels to which this year's flax deliveries are expected to reach.

Flax is handled differently from any other grain in Canada. It has been bought outright by the government of Canada through the Canadian Wheat Board on a price basis of \$5.00 per bushel for 2 C.W. Flax in store at lakehead terminals. The government has been reselling such flax on the basis of \$5.00 per bushel, which is the ceiling price in Canada. It has made some profits through the export of flax to the United States, and has collected certain funds in equalization fee payments charged for permits to export linseed oil.

While this additional payment of 50 cents per bushel represents a participation by producers in profits made or expected to be made by the government, the Minister of Trade and Commerce, the Hon. C. D. Howe, in announcing the payment, made it clear that no complete accounting by the government to producers is contemplated. He indicated that Canada's surplus of flaxseed and oil was being used in commercial arrangements with other countries in order to secure supplies of other oils required in Canada, and that the nature of these arrangements prevented any clear-cut accounting with producers.

The additional 50 cents per bushel represents an estimate of what might be a reasonable participation to producers. It is intended to relieve the government of any further responsibility to producers so flaxseed and products thereof may be employed by the government in whatever way seems best to it.

It is generally expected that the government, will again announce a fixed price basis on which it will buy flax produced in 1948, although no definite announcement has yet been made.

Wheat and Corn Prices Down in U.S. Markets

During February a rapid decline in prices for wheat and corn took place on the Chicago market. This was responsible for corresponding declines in prices for oats and barley on the Winnipeg market and in the price at which Class 2 wheat is offered by the Canadian Wheat Board to countries other than Great Britain. In the United States there has been much discussion of the reasons for the drop, and these are of interest in Canada even although after price readjustments the Canadian level remains much below that prevailing in the United States. Wheat prices started their decline in Chicago from levels well above \$3.00 per bushel and it looked for a while as if they might decline to the parity price basis of \$2.22 per bushel guaranteed by the government. Among reasons mentioned are the

The International Wheat Conference was in progress at Washington and there was much discussion of a possible maximum international price of \$2.00 per bushel, along with suggestions that a declining scale of maximum prices should be put into effect over a period of years. This was sufficient to cause alarm to the owners of wheat in the United States.

The United States government is widely blamed, because of the way in which it conducted buying for export, both for the very high level of prices reached for wheat and the subsequent decline. The government had established a program calling for the export of 450 million bushels of grain during the crop year. It had gone into the market and bought vigorously, bidding up prices in an effort to persuade farmers to part with wheat. Then, suddenly it announced a discontinuance of buying, with the statement that it needed only 70 million bushels more to complete the program for the remainder of the crop year, although an additional 50 million bushels might be bought to increase the program. Naturally, the disappearance of the largest buyer disturbed the market and made almost inevitable a decline to lower levels. Perhaps next in importance was discussion at Washington of legislation to curb inflation, and a feeling that measures might be introduced aimed at preventing any further increase in the price of wheat and probably to roll it back to some more moderate level.

Then there were statements from the international Emergency Food Council suggesting that the present world deficiency in food had been overstated. That did not mean that the food position was either satisfactory or free from grave dangers, but simply that these dangers were somewhat less than earlier stated. In part, that was due to large harvests in the southern hemisphere, for Argentina had an excellent wheat crop and Australia, with an estimated crop of 228 million bushels had a record production. Those crops fell far short of making the wheat situation easy, and it will be remembered that Argentina is still obtaining extremely high prices,

Turn to page 74

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Saskatchewan Grows Fewer Spuds

Regina and Saskatoon now obtain part of their needs from neighboring provinces

By C. H. HIGGINBOTHOM

OR a long time dissatisfaction has been expressed with the production and marketing of potatoes in Saskatchewan and the need felt for an investigation which would provide reliable data on the industry. Three factors have also entered the picture and aroused new interest in the future prospects for the farmer dependent on this "prince of vegetables" either casually or almost completely for a living. Briefly, they are that Saskatchewan is not self-sufficient in potato production, acreage sown is falling rapidly, and demand, because of the continuing migration of rural people to cities, is likely to

Until recently there was only a general idea of the condition of the potato industry although, on marketing in particular, there were many varied and unrelated complaints from growers. There has now appeared a preliminary report on the marketing and production of potatoes based on a survey made in 1946 by the Saskatchewan government's department of co-operation and co-operative development. This report, nevertheless, gives a clear picture of the potato growers' problems and their relationship to Alberta and Manitoba.

Decline in potato production during the past ten years has been large, the survey has shown. In 1936, 46,077 acres were planted to potatoes representing .2 per cent of area planted to field crops, and by 1946 this had gone to 26,966 acres, or .1 per cent of the area in field crops. Reasons for the decline are given as competition of other crops, lack of adequate marketing facilities and changes in the habits of ethnic groups. The last-mentioned reason is significant and apparently linked with a change of outlook on the part of farmers who came originally from Europe, and their descendants. Much of Saskatchawan's surplus potato crop comes from farmers of European racial origin who settled in the parkland and forest regions. These farmers were brought up to self-sufficiency and know potato growing. The picture is changing. The report says: "Surplus production in the ethnic group areas is tending to be less as assimilation of the people proceeds in the second and third generations."

Factors likely to effect future demands for potatoes in Saskatchewan include nutritional education, migration of rural people to cities bringing increased commercial demand, and "greater specialization in grain production as farms become larger" bringing decreased supply and increased demand in the areas' affected. To some extent Saskatchewan demand for potatoes is filled by shipments from Alberta and Manitoba. On the basis that parts of these provinces have producing areas similar to Saskatchewan, the report concludes there is scope for increased sale of a larger Saskatchewan production.

SOME idea of what these imports amount to from outside and therefore what these increased sales might possibly be can be gained from study of wholesalers' purchases during 1944-1945, regarded as a normal production year. In that period wholesalers bought from Saskatchewan growers 61,422 cwt., from Manitoba, 1,746 cwt., from Alberta, 37,509 cwt., from British Columbia, 15,393 cwt., and from the United States, 5,252

cwt. The figures for 1945-1946 are interesting, but because they represent a very poor crop year are not so significant. In that year, for instance, the wholesalers bought only 12,850 cwt. from Saskatchewan and imported the staggering amount of 330,512 cwt. from the United States.

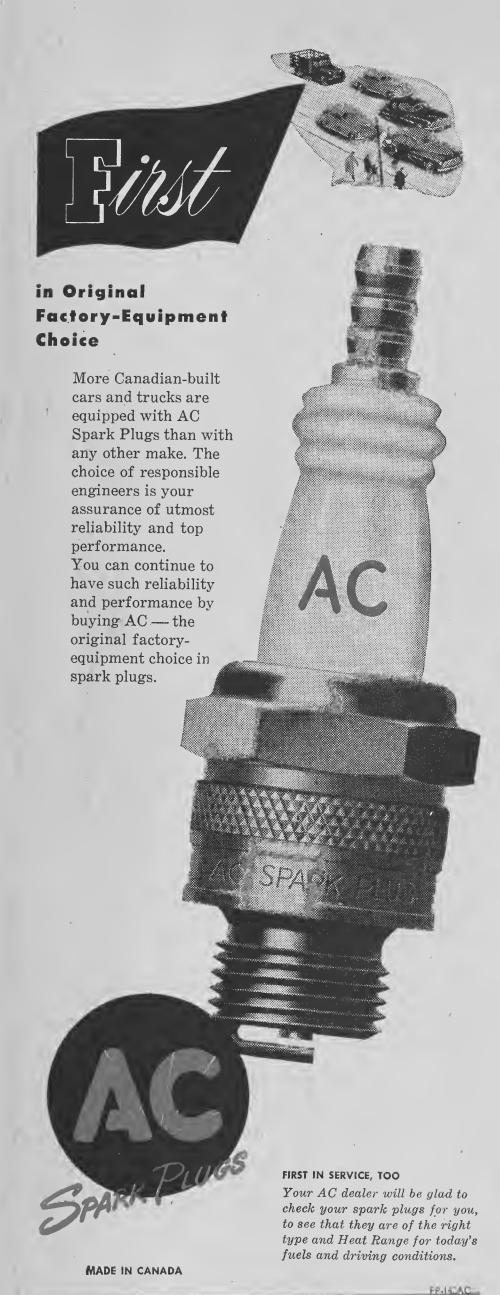
On the question of supply it is believed production near large cities will tend to expand. Production in the prairie region generally will likely decline, not only because farms are becoming fewer, but also because mechanized operators will not "devote necessary time and labor to the enterprise." The report also observes that improvements in cultural, handling and storage methods and grading practices should increase yields and reduce loss and wastage.

ON the subject of irrigation it is pointed out that the major areas in which this is practised are near the cities where growers depend either on city water or on private pumping systems. Touching on the proposed South Saskatchewan project, the report notes that while this will be several years in the making there are areas in the vicinity, about 4,000 acres, that are well suited to vegetable production and might be developed before the main project.

There is, however, a note of caution in that part of the report dealing with irrigation generally. While it says that irrigable areas provide the potential source of a stable supply of potatoes, vegetables and some fruits, it adds "the problem of obtaining this supply, however, goes beyond that of providing the irrigated land. Irrigation farming connotes an entirely different form of farm living to which only a proportion of dry farmers can adapt themselves, while a still smaller proportion would be prepared to engage in the intensive type of farming involved in vegetable growing."

During the survey it was found that most growers believed marketing facilities were inadequate; 68 per cent of a group of growers questioned thought returns would be increased if central storage facilities were available, 78 per cent favored pooling returns with those of other producers to receive an average price return for the year, and 90 per cent favored the organization of a cooperative marketing association. Of the actual 75 growers who favored co-operative marketing, 48 favored an allpurpose association, four a storage only, four a selling agency only, while 19 expressed no specific preference.

Some general conclusions can be reached from this informative government report on the Saskatchewan potato and vegetable industry. In the first place it appears that a limited market exists in Saskatchewan and to a lesser extent in Manitoba for an increased potato production provided adequate storage facilities are provided. The figures potato consumption in Saskatchewan and the prairies generally are not available but as it is estimated generally that North Americans consume about 2.5 bushels compared with a normal of seven bushels annually for some Europeans efforts to increase consumption locally might make some difference to the industry.



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New Zealand Farms on Grass

Abundant rainfall, all-year pasture and distance from market have led to high production per worker, based on livestock

By D. W. NASH

ERY few Canadians have ever been able to visit New Zealand. During the war a great many of her young men took their air training in Canada, and we know of her also as a sister, self-governing Dominion in the British Commonwealth of Nations, whose population, aside from the native Maoris, has been almost wholly derived from the British Isles.

There is much of interest to Canadian farmers in this small island Dominion lying in the South Pacific. Like Canada, her history has been principally agricultural. While we export perhaps 30 per cent of all our farm products, New Zealand exports from 60 to 70 per cent of the products her farmers produce.

New Zealand's chief handicap is her great distance from the principal markets of the world. Her nearest neighbor is Australia, distant about 1,200 miles across the Tasman Sea. South about 1,600 miles is the comparatively unknown continent of Antarctica. Westwards about 6,000 miles is South America, and north westerly about 6,200 miles is British Columbia. It is 6,600 miles from the Panama Canal to New Zealand, and around 5,500 miles to San Francisco.

The combined area of all the islands which comprise New Zealand is less than 104,000 square miles, of which all but a few hundred square miles are contained in the two main islands. Expressed in acres, this total area is little more than 66 million acres, or roughly equal to that portion of prairie Canada bounded by the four Alberta and Saskatchewan cities, Regina, Saskatoon, Edmonton and Calgary.

Of this total area, about 23 million acres, or a little more than one-third, is taken up by towns and cities, small holdings of less than one acre, communal land of the native Maoris, unoccupied town land, mountain and forest land and other land unfit for settlement. This leaves about 43 million acres of occupied farm land, of which not quite 20 million acres is improved land, an amount approximately equal to the land under summerfallow in the three prairie provinces of Canada.

WHAT chiefly distinguishes New Zealand agriculture is its unusual proportion of pasture. Field crops of all kinds, which in Canada occupy around 60 million acres, an area nearly equal to the whole of New Zealand, are confined in the latter country to 1.3 million acres, which is about what was seeded to flax alone last year in the three prairie provinces. Tame or seeded pasture, on the other hand, occupies 17.5 million acres out of the total of 19.8 million acres of cultivated and improved land, while in addition there is a further 18.3 million acres of pasture on unimproved land consisting of native grasses, ferns, shrub and second growth.

The total number of farms in New Zealand is around 85,000, which is probably about as many as there are in the province of Alberta, as far north, but not including, the Peace River area.

The climate of New Zealand is extremely favorable to farm production. It is claimed that the average yearly output of the New Zealand farm worker is higher than in any other country in the world. Rainfall is from 30 to 75 inches per year in most of the habitable parts of the country and is well distributed, permitting many hours of sunshine. This means that the rainfall is efficient and permits an abundant growth of grass and a luxuriant forest cover. European occupation of New Zealand has now lasted for more than 100 years, and only twice on the Canterbury Plains, the largest unit of flat land

ERY few Canadians have ever been able to visit New Zealand.

During the war a great many of her young men took their air again Canada, and we know of her in New Zealand, has the rainfall dropped to half the normal amount. Furthermore, there is said to be no record, in all this time, of two continuous months without rain.

New Zealand is best described as a mountainous country. Three-quarters of its land surface is more than 650 feet above sea level. Each of the two main islands is divided into eastern and western regions by a mountainous area which serves as a collecting basin for rain water as do the Rocky Mountains to the west of the Canadian prairies. A century ago, three-fifths of New Zealand was covered with forest, and much more forest had already been destroyed by Maoris and by showers of volcanic ash. Originally, the greater part of the North Island and the west side of South Island was covered with a dense sub-tropical growth including a wide variety of trees, called a rain forest. Much of this land has now been cleared for pasture on the North Island; and this clearing, in a high rainfall area, has developed many different types of soil erosion. Sheep farming, seems to do little to control erosion, but on well-managed dairy farms the soil fertility is much greater and erosion much less noticeable.

NEW ZEALAND has nearly two million dairy cows and more than 30 million sheep. Her exports are primarily meat, wool and dairy products, including butter, cheese and condensed milk. In 1942, the last year for which figures are available, wool, meat, butter and cheese exports made a combined total of \$209 million. Wool, meat, and butter were in this order of importance, though each accounted for between \$50 and \$60 million, with cheese about \$30 to \$40 million.

Production of mutton and lamb totals about twice the amount of beef production, and lamb is about one-third more than mutton. The pastoral industry (sheep) is now nearly 100 years old, and began with the use of Merino sheep on the Tussock grassland of the South Island. Today two-thirds of all sheep are cross-bred, with about four million Romney, which is the main breed on the North Island. Next in order come the half-breds, which are Merinos crossed with Longwools. These produce a heavier fleece and better carcass. The Corriedale now exceeds the Merino in number.

Total cattle in New Zealand number around 4.5 million, of which close to two million are beef cattle which are maintained on sheep farms principally to control pasture. In recent years the Aberdeen-Angus has become the chief breed, though a considerable amount of cross-breeding of Hereford bulls on inferior Aberdeen-Angus cows is practised. Early maturity is not as important as in some other countries, partly because adequate winter feeding where farming is based mostly on grass, is more difficult. The largest numbers of beef cattle are on North Island.

Among the nearly two million dairy cows in milk in New Zealand, the Jersey type is predominant. The majority of the dairy cows are grade Jerseys built up on a foundation of several breeds, of which the most important was the Shorthorn. In the last 25 years, Jerseys breeding and type has increased from less than 30 per cent since 1921 to 75 per cent in 1938. During the same period the Shorthorn decreased from 56 per cent to eight per cent. Friesian cattle (Holstein) have held fairly steady at around 12 per cent and are largely confined to areas of fluid milk production. The Ayrshire for the colder districts has increased from about three per cent to six per cent. In the early

war years, 78 per cent of all dairy herd sires in New Zealand were Jersey.

During the last 20 years or more, the average production of butterfat per cow has increased by 20 per cent, and has been as high as 32 per cent. Dairy farming is more or less confined to the flat and gently rolling country where the rainfall is 40 inches per year or more, and well distributed. Consequently four North Island land districts, North Auckland, Auckland, Taranaki and Wellington, contain somewhat more than two-thirds of the milking cows of New Zealand.

DAIRY cattle are pastured the year round; and of the seeded pastures, the more important kinds are perennial rye grass, cocksfoot and white clover. Pasture management is efficient, and very large quantities of lime and fertilizers are used as top-dressing and combined with sub-division and rotation of pastures, along with harrowing and mowing. It is calculated that dairying pasture land in New Zealand produces from 200 to 350 pounds of butterfat per acre, though the average is from 100 to 150 pounds. The New Zealand winter and spring season extends from the first of June to the end of September or the middle of October, and during this season, from two-thirds of a ton to a ton of hay or its equivalent in silage made from permanent pasture grasses, is required as supplementary feeding. Some supplementary feeding may be needed in summer, that is from the middle of January to early April, but this depends on the amount of summer rainfall and the kind of pasture avail-

In 1942, about 89 per cent of the total cows in milk were on farms using milking machines. There were, in fact, more than twice as many milking machines in use in New Zealand as there were tractors in that year. The use of milking machines and modern milking sheds make it possible for one man to milk and manage a herd of 25 to 30 cows, two men 80 cows, and three men up to 110 cows.

Only about eight million bushels of wheat are grown each year in New Zealand. The yield is between 30 and 35 bushels per acre, and the Dominion finds it necessary to import about two million bushels each year. Wheat and oats each occupy about 250,000 acres annually, and peas about 30,000 acres. Lucerne (alfalfa) is grown on about 40,000 acres; turnips and swedes occupy around 340,000 acres; potatoes 15,000 to 25,000 acres; fibre flax 20,000 acres; and grass and clover seeds combined, 120,000 acres.

New Zealanders divide the history of their agriculture into several rather distinct periods, beginning with the Maori primitive cultivation of the land prior to European settlement, followed by the subsistence farming of the early settlers, the development of the pastoral industry over a 30-year period prior to 1882, after which came the introduction of refrigeration and the development of the meat and dairy industry, especially since 1900. The 100 or more years since 1840 have witnessed truly remarkable strides in New Zealand agriculture. Today, the breeding and management of livestock provides the chief occupation for the New Zealand farmer, and this in turn is based upon a highly efficient and complicated system of pasture management, which includes the handling of many different kinds of pastures on a great variety of soils and types of country.

A word about the early Maori agriculture will serve to round out this glance at the agriculture of another great farming country. The Maoris settled mainly on the coast, where the forest was within easy reach and where food supplies were more plentiful. Before reaching New Zealand, they had lived in the warmer islands of the Pacific, and they brought with them some of the tropical plants to which they had been accustomed. They lived chiefly by planting crops, but cultivated the soil only on a small scale, and supplemented their food supply by berries and roots from the forest and by fish from the sea.

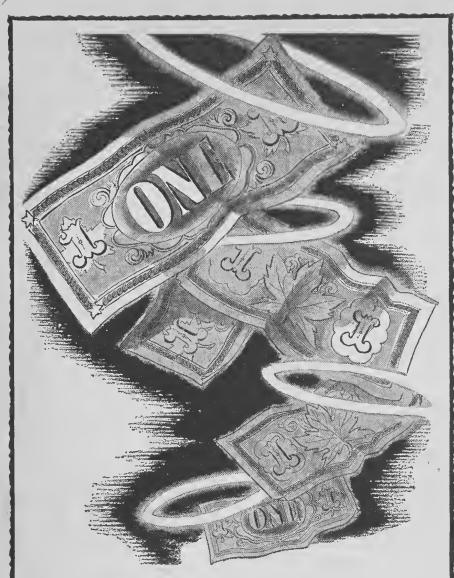
Their tools were primitive. They commonly used a digging stick, with a blade about three inches wide and a handle about eight to ten feet long. This was used merely to loosen the soil, after which flat wooden spades were used for digging. Though their methods were primitive, the Maoris had a good knowledge of soils and recognized quite a few distinct soil types. They grew mainly root crops. There were very few weeds to combat, and once the crops were planted, they needed little attention. They protected fields from the winds, sometimes by building fences around them, and screened plants from the sun by means of branches. Fairly large areas of swamp land were drained. Sometimes gravel and sand was spread over the surface of cold soil to warm it up. After harvest the crop was stored in shallow, underground pits.

THERE were therefore no extensive areas of cleared land available when the first European settlers reached New Zealand. The development of successful agriculture has been achieved by taking advantage of the natural grasses of the country and its favorable climate; and by adapting these to the needs of the country for exportable products, success has been achieved in spite of great distances from markets.



New Zealand is best described as a mountainous country.





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Birth of a Tornado

The physical forces which give rise to devastating storms

SOMEWHERE near the equator off the west coast of Africa there may be a calm over an area of warm ocean. Warm air rises and cold air then rushes

Soon an updraft like that in a chimney originates. Because so great a bulk of warm air rises bodily, the cold air rushes in from below in a great howling

Thus is a hurricane born in what are called the doldrums.

A hurricane is a whirlpool of air. As a whole it travels slowly. The average speed from place to place is only 12 miles an hour or so. It is otherwise with the rotary motion of the hurricane itself. Wind velocities may vary from 75 to 150 miles an hour. Since there is no easy way to distinguish the forward movement from the whirlwind, it was long thought that hurricanes travelled along at more than express train speed.

What starts a hurricane whirling or spinning? The motion of the earth. A hurricane is somewhat like a turntable. If the turntable rotates rapidly enough, a man sitting on the periphery is flung off; if he sits in the centre he just

If we could look down on the earth from the North Pole and see its winds, it would appear somewhat like a turntable of which the equator would be the rim. The rim (equator) would be travelling more rapidly than the centre (the pole). Hence the edge of the huge mass of rising air which is nearer the equator must travel faster than the farther edge. Thus the whole mass is given a twist.

THIS is the reason hurricanes that start north of the equator always turn in a counter-clockwise direction, and why hurricanes south of the equator turn clockwise. No hurricane ever starts exactly on the equator.

A hurricane tends to travel westward because the air slips back a little as the earth turns on its axis. Hence the slow westward movement.

What is still lacking is the terrific energy of a hurricane. This is provided as the warm, water-soaked air that has risen begins to cool. Rain then falls because water is squeezed out of the air by the cooling. This means that energy is released. That energy is translated into motion. The hurricane spins still faster. So the rotating earth acts as a sort of crankhandle to start the hurricane, just as if it were a gas

Once started, the hurricane-engine runs faster and faster.

In nearly all these whirling masses of air, variously called hurricanes, tropical cyclones, tornadoes, typhoons, and baguios, there is a dead centre poetically called the "eye of the storm." This dead centre is a consequence of centrifugal force. The wind eventually spins so fast in a hurricane that it can no longer fly inward, just as a man on the outer edge of the fast turntable finds it impossible to crawl to the

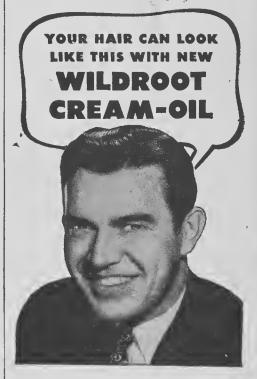
So the inside of a hurricane is a sort of hollow pipe which may be several miles high, according to some meteorologists. But the bottom remains open, so that warm, moist air can be drawn in, to be whirled out to the edge of the hurricane.

When the bottom of this pipe touches land or very cold air it is closed. No more moist air can enter, and as a result the hurricane languishes.

The chances are that an Atlantic hurricane will encounter prevailing westerly winds which will push it out into the Atlantic again. Most Atlantic hurricanes end after a period of two months or so in a depression over Iceland .-- W. K., in the New York Times.



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ARCTIC LIVESTOCK

Continued from page 5

chewing on the part of the reindeer is similar to bone-chewing by cattle and is likely caused by a craving for certain minerals or other essentials in the diet.

THE feet of the reindeer are large and broad, almost identical to a cow's foot, and useful for pawing snow in the winter. A breed of cattle that would learn to paw for food through crusted snow in the same manner as the reindeer would be a real asset on a ranch. Reindeer can cope successfully with over a foot of hard, drifted snow, digging up good-sized pieces of reindeer moss and eating them on top of the snow.

One of the most noticeable features of a herd of reindeer, especially when it is being handled, is the noise it makes. There is a chorus of brief, low-pitched blats from both adults and fawns which closely resembles the noise that would be made by a bunch of hogs. The clicking of hoofs when the animals are on the move is also the cause of considerable noise.

Reindeer have the peculiar habit of continually milling in the same direction when they are being handled and especially when corralled. The Canadian reindeer herds invariably mill in a counter-clockwise direction and this has to be taken into consideration when building corral wings to assist in corralling the animals. In some regions of Alaska and Siberia the reindeer habitually mill in a clockwise direction, just the opposite to that followed by Canada's reindeer. In a large herd, especially when confined to a holding corral, some animals may be lying down in the centre of the herd while those on the outer perimeter are travelling at a good clip. The nervous disposition of the semi-domesticated reindeer is made pronounced when they are infrequently corralled and handled, and no doubt contributes towards the tendency to mill.

Reindeer meat could be described as somewhat similar to both beef and mutton. It does not have much of the wild, gamey flavor of venison or antelope, and when properly cooked makes a tasty meat dish that can be relished for long periods without interruption. A well-fleshed carcass carries one to two inches of pure white fat over the entire back and makes steaks or chops of the first order. A fat three-year-old reindeer steer, the age at which they reach maturity, makes the choicest eating.

The hide of the reindeer is an exceedingly useful product in the far North. Fawn skins are prized for making inner parkas worn with the fur next to the human skin. At three to four months of age reindeer fawns have a thick coat of very fine hair which is fully as warm as any fur, and has the added advantage of being unusually light in weight. When the reindeer are

being handled in corrals at roundup time, a few fawns have their horns accidentally broken at the base. These are killed along with additional off-color or off-type fawns in order to secure fawn skins for parkas. Killing is done by pithing, inserting the blade of a knife at the base of the skull until it penetrates the brain. Adult reindeer hides are valued for bedding, being used to make sleeping bags as well as outer parkas. When tanned they make buckskin which is useful for clothing and many other purposes.

AN event of much interest in the reindeer business is the annual roundup which takes place in late July. One purpose of the roundup is to accustom the animals to handling and thus prevent excessive wildness. As they are only corralled once a year on this occasion, it is sometimes a difficult task to corral them all without losing some in stampedes. As all handling is done on foot with the aid of herd dogs, the troubles that such fleet-footed animals can make are apparent.

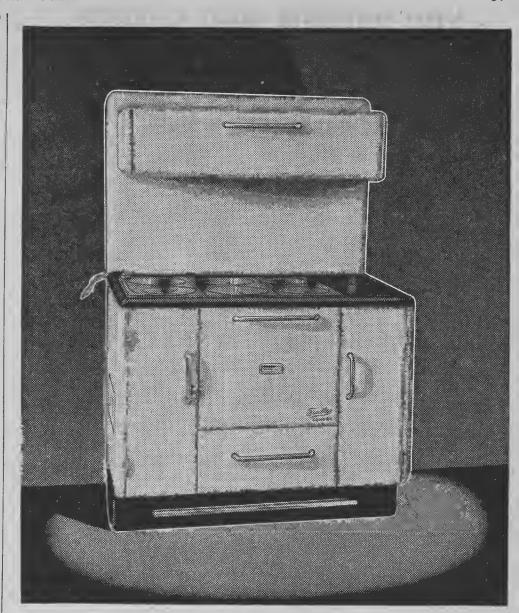
The approach to the corral sometimes consists of a gradually tapering bottleneck that may be half a mile long. The reindeer herd is driven into the wide end of the bottleneck which is immediately closed by rolling out many rods of snow-fencing that is held upright by temporary posts. A moving fence then gradually crowds the milling herd toward the narrowing end of the bottleneck. This moving fence consists of a strip of burlap 30 inches wide and perhaps a quarter of a mile long. The Eskimo herders, their families and friends carry this burlap along, being distributed along its entire length at intervals of two or three rods. Once inside the main holding corral with eight foot fences the gates are closed, the herd is safe and work can commence.

From the holding corral the reindeer are moved through sliding gates into progressively smaller oval-shaped corrals until they reach the working pens. Here they are classified, a few at a time, according to age and sex. The tally man sits on top of the fence with a score sheet and marks down the tally as called by the head man in the working pen. All fawns are caught by the horns as they go by, and bulldogged, after which they are held on the ground by two men or boys in much the same manner as a calf is held at branding time.

Male fawns not intended for breeding purposes are castrated, and all fawns are earmarked to denote ownership. Owing to the thin skin and thick hair, the fawns cannot be branded. Lightning fast in their movement, the reindeer present a spectacle of great activity when being handled at close range, and much skill is necessary to bulldog a 300-pound bull single handed. In spite of a forest of huge many-pronged horns, the reindeer has an uncanny ability to avoid hitting any obstacle with them,



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Benefits paid to policyholders and beneficiaries during 1947: \$101,914,657;

Total Benefits paid since the first Sun Life policy was issued in 1871: \$2,021,889,123;

New Assurances issued during the year: \$380,659,514;

Total Assurances in force: \$3,837,724,159.



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especially when they are in the tender velvet stage.

For best breeding results it is considered that reindeer bulls should number not more than seven per cent of the herd. Some reindeer men favor castration as fawns, while others are of the opinion that they make better steers if they are not castrated until they are yearlings. Using a good corral with plenty of help, it is possible to handle up to 2,000 reindeer in a day. From the working pens the reindeer are released into another large holding pen where they continue to mill until the entire herd is turned out on the range after the day's work is completed.

During the months of April to August the reindeer graze along the Arctic Coastline where they can take full advantage of sea breezes that help to disperse the numerous mosquitoes and flies. These insects cause the reindeer much discomfort, and they do not commence to lay on fat until the worst of the fly season is over. Warble or heel flies pester reindeer even more than they pester cattle in the summer months, while during the late winter and spring the warbles come out through the back of the animals with accentuated ill effects to the reindeer and its hide.

Of interest is the fact that a herd of reindeer inhabiting St. Lawrence Island in the Bering Straits, between Alaska and Siberia, is entirely free of warbles. Half a century ago a small number of reindeer were taken to this Island by boat in July. These few reindeer had shed all their warbles before shipment, and the warble flies had not had an opportunity to lay any eggs on them. As a result of this fortunate happening, these particular reindeer were completely free of warble infestation on arrival and the progeny of this initial herd has continued to be free of warbles up to the present time. It is one of the most thrifty herds of reindeer to be found and is perhaps the only warblefree herd of reindeer in existence.

SUMMER forage for the reindeer consists chiefly of grasses, sedges and herbs. As there are nearly 400 different species of vegetation growing in the region north of the Arctic Circle, the reindeer finds plenty to choose from, especially during the summer months. There are many browsing plants and shrubs as well as low-growing broadleaved species. An abundance of grass is also to be found in many sections of the country. Lichens or reindeer moss is possibly more common than any other form of vegetation but it is not eaten to any extent in the summer

In late August the reindeer are gradually moved towards the winter range which lies from 50 to 100 miles inland on the east side of the Mackenzie Delta. This winter range contains a high percentage of reindeer moss which is the main source of winter feed. Much of the winter range is rough, hilly country with a certain amount of brush in the coulees. This type of country affords a certain amount of shelter from storms and allows grazing throughout the winter months.

Grazing is made possible in the winter owing to the fact that the snowfall in that area is not excessive. The average annual precipitation at the Reindeer Station is only seven inches and it is apparently uncommon to have more than a foot of snow. Incessant wind cleans the snow off the high spots and results in hard wind-drift in other places. As chinooks or thaws do not occur, there is no difficulty from the ice or badly crusted snow that occasionally makes a half-hearted chinook a curse instead of a blessing on Western ranches. Temperatures in that region of the Arctic do not go much below

those experienced on the prairies as a rule. Forty degrees below zero is considered just as cold up there as it is anywhere in Western Canada. Proximity to the Arctic Ocean appears to have a tempering effect on the climate, as regions in the Yukon, which actually are much further south, are a great deal colder.

Late in March the reindeer are moved from the winter range north to the fawning range which lies adjacent to the summering areas along the Arctic Coast. Fawning commences in April and extends over a period of about six weeks. The fawns are exceptionally vigorous and hardy at birth as they may be born when the ground is covered with snow and the temperature is as low as 30 degrees below zero. These conditions apparently do not bother them to any extent as they are running around as soon as they have a fill of their mothers' milk. Reindeer milk is exceedingly rich, containing 18 per cent butterfat—as compared to 4 per cent for average cow's milk. This is doubtless one of nature's methods of assisting survival under extreme conditions.

It is of interest to observe that there has been a gradual change in the fawning season since the reindeer left Alaska nearly twenty years ago. The fawning season is now ten days to two weeks later than it was then—due, no doubt, to a difference in the climate. The rutting season, in some Alaskan reindeer herds, commences in early August as opposed to late August for the Canadian reindeer. This change in a comparatively short space of years indicates Nature's method of adapting livestock to different environmental conditions to ensure survival of a

OWING to the tendency for reindeer to stray off and fall prey to wolves and other predators, continuous herding on a 24-hour-a-day basis is essential both summer and winter. Actual herding is done entirely on foot over a type of country that is poor footing by any standards. Boats are used to supply herd camps in the summer while dog team or reindeer team is used in winter. The use of skis in winter facilitates foot travel over the tundra which is studded with niggerheads.

Reindeer herders usually work in teams of two or three, depending upon the size of the herd, and they stay on duty for 24 hours at a time. As a rule they have a small tent available for shelter while they boil a pot of tea and have a bite to eat. In the summer the herders are assisted by the continuous daylight but flies and mosquitoes combined with tough walking represent some of the difficulties encountered. Unending darkness and occasional storms in the winter complicate the problem of keeping a large herd intact in an immense area without a fence in a thousand miles. The reindeer are not close herded. Three thousand of them might spread over one or two sections of ground at a time when grazing unmolested. However, constant vigilance around the perimeter of the herd is necessary to avoid losses from straying or from wolves. If the reindeer could be corralled each night as range sheep are corralled, the problem of handling them would be greatly simplified.

The establishment of Canada's reindeer industry in the Far North is a subject of absorbing interest. It is a unique phase of livestock management in Canada with no local precedents to follow. Its ultimate contribution to the benefit and welfare of the residents of the North now appears to be assured and the future progress of the industry will be watched with great interest by all Canadians interested in livestock and in the vast northern regions of their country.



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Nature Guide For Farmers

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KERRY WOOD

Red Deer **Alberta**

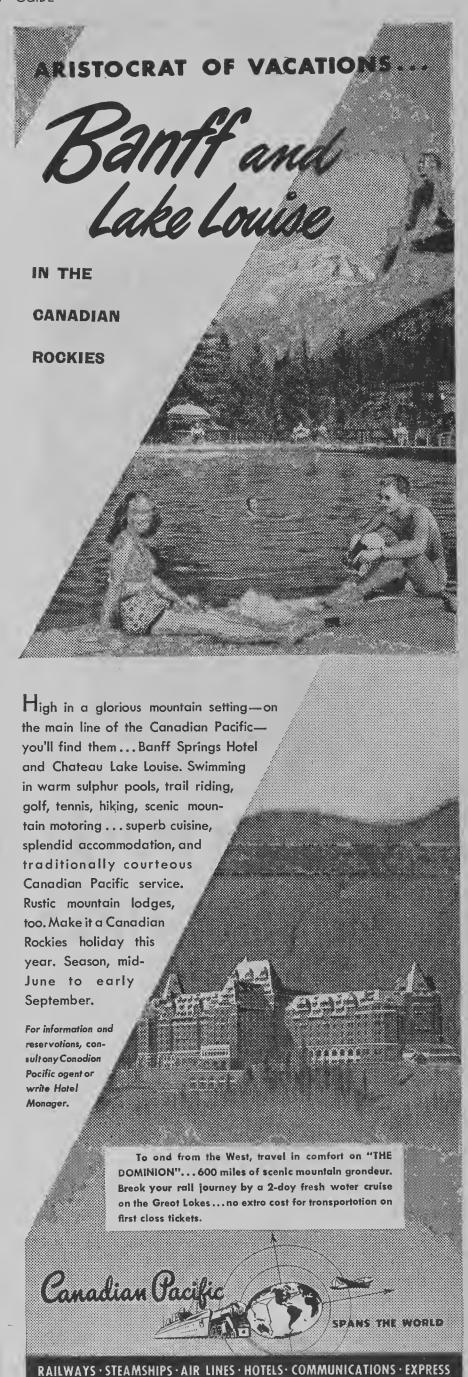
A Nature Quiz

True or False?

HOW much do you know of the habits of the wild creatures living in western Canada? Unfortunate pavement-breds will probably not know whether half of the statements made below are true or false. Bright young farm boys may get 14 out of the 20. If you can get 17 you can qualify as an amateur naturalist, for there is no locality where all the animals listed here may be found.

- 1. The varying hare, more commonly called the bush rabbit, goes through a cycle of abundance which occurs regularly every seven years.
- 2. Coyotes have increased in numbers since primitive times because the coming of the farmer provides them with poultry and sheep for prey.
- 3. Beavers hardly ever cut down hardwood trees or evergreens.
- 4. Ducks can do more damage to swathed grain than grain harvested by binders.
- 5. Big owls will sometimes attack large animals.
- 6. A skunk is able to "perfume" his opponent at a distance of 15
- 7. A pocket gopher can dig a mile of tunnel in a year.
- 8. A stiff drink of whiskey is the best emergency treatment for snake
- 9. Chickadees have no bad habits.
- 10. Canadian snakes gather in large numbers to hibernate.
- 11. Bats are obnoxious because of their habit of becoming entangled in women's hair.
- 12. While bush rabbits are not always safe to eat, they may be handled without any fear of contracting disease.
- 13. The gopher, on the other hand, is dangerous to handle because it may convey disease to humans.
- 14. Some ducks nest in bird boxes.
- 15. A magpie is a worse pest than a crow.
- 16. Some song birds carry bird lice which will infest humans if the birds are allowed to nest near houses.
- 17. Striped gophers prey on field mice.
- 18. During the summer farmers can confidently expect to see 40 good hawks for every "bad" hawk sighted.
- 19. Rattle snakes were given their name because they always make a rattling sound just before striking their victims.
- 20. Skunks live largely on grasshoppers during the hopper season.

For correct answers see page 102. Or better still, get Kerry Wood's book "A Nature Guide for Farmers," direct from the author, Kerry Wood, Red Deer, Alberta, \$1.00 postpaid. Actually the list of questions was made up by underlining statements made by Mr. Wood in the book, and if readers disagree with the answers given on page 102, Mr. Wood will be called upon to referee Whatever the final judgment may be. the editors will feel they have done something useful if they succeed in putting the book in the way of large numbers of farm readers.





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*BACKBONE Tread is exclusively designed to dig lugs in full length and full depth : . . for surer, full-bite traction. There are no lazy lugs.

*BACKBONE Tread is built to keep its grip in wet soil! No mud or dirt traps. Rolling, flexing tire throws off loose dirt and mud.

*BACKBONE beats costly road wear. Smooth-rolling center rib guards against destructive lugbending and scuffing.

Before you buy any farm tractor tire see your Dominion Royal Tire Dealer.

DOMINION RUBBER COMPANY LIMITED

THEY REMEMBER ART NEWMAN

Continued on page 13

tion from the very first, and 6,000 head of cattle were treated in the spring of 1938 in an effort to provide market cattle more suitable for the requirements of eastern buyers who were being directed to the area through the co-operation of the Western Stock Growers' Association. The Derris powder purchased for this purpose, incidentally, was the first Derris powder ever handled by the Western Stock Growers' Association

Eastern buyers were also interested in cattle that were free from tuberculosis, and the Neutral Hills Livestock Board began immediately to enquire into the establishment of a restricted, or T.B.-free area. By August, 1938, they were able to record an assurance of support for this project from the then minister of agriculture in Alberta, the Hon. G. D. Mullen.

Inspired and encouraged by Art Newman, a total of 514 townships were actually canvassed and signed up in a period of three months. The resulting petitions were presented to the provincial government, and everything was going well when the war began, which necessitated calling off the T.B.-free area for the time being. Meanwhile, however, the Neutral Hills Livestock Board had studied and developed the idea of making the Neutral Hills area a purebred sire area also. The Alberta Department of Agriculture was asked to provide the necessary legislation by which it was hoped that approved sire areas could look forward to becoming purebred sire areas in a specified number of years.

Early in 1940, the Central Alberta Livestock Association entered into an arrangement with the United Farmers of Alberta, by which it became the livestock department of the U.F.A. A joint committee was set up in June of that year, on which C. D. Lane, who had been chairman of the Central Livestock Association since its formation, was the producer's representative, and Art Newman, who had left the service of the Dominion Department of Agriculture to devote his full time as field service representative for the U.F.A., was secretary.

THE arrangement with the U.F.A. did not last more than a limited time, and when it ceased, the Neutral Hills Livestock Co-operative Marketing group joined with several other similar groups to form Federated Co-op Services in Edmonton. The purpose of this arrangement was to co-ordinate the clerical work of the co-operatives and pro-rate costs on a proper and economical basis. A bit of interesting history is involved in the fact that at that time, the provincial law prohibited more than one co-operative from pro-rating out of a single office. Therefore, the Neutral Hills organization could only join for this purpose with some other organization illegally. Four shipping associations facing the question of illegality, joined together anyway and trusted to their ability to persuade the government later to amend the Act, in which they were eventually successful. Last year the volume of shipments pro-

rated amounted to \$2,799,486, mostly from about six fairly large associations and seven quite small ones.

It should be emphasized again that the original purpose of the Neutral Hills Grazing Association organized in April, 1937, was solely improvement in the quality of livestock, in the amount and quality of pasture, in the control of serious insects such as warble flies, and in the improvement of marketing conditions. Neither this association nor any of the others growing out of it or co-operating with it has departed from this original aim. One of the results of improvement is that, today, a completely different type of cattle is being shipped out from the Neutral Hills area from that which existed in 1937. Much credit is given for this to the generous bull-loaning policy of the Dominion Government, to the inspiration and persistent efforts of the late Mr. Newman, to the selection of a single breed for the area, and to the ability of the Neutral Hills people to co-operate with all other nearby areas for the improvement of its cattle business.

LEARNED that all farmers in the Neutral Hills area are using purebred sires, though not all are members of the Association. Ordinarily, the Dominion bull-loaning policy is applied in a district for six years, with a possibility of a one-year extension. So successful has been the improvement work in the Neutral Hills area, however, that the arrangement has now been renewed for another six years, together with an assurance of an increase in the number of bulls that can be made available on the basis of one government bull for each one owned and in use locally. Some members of the association have been so impressed with the value of the bull service in livestock improvement, that they have offered to lend their own bulls for pairing in order to keep the service going.

The Neutral Hills district, it may be noted, is now prepared to buy its own bulls, but the department decided that it served as a splendid nucleus for the extension of livestock improvement to a much larger area. Plans are now being made, in fact, to extend the scheme of livestock improvement to an area of 600 square miles, and in this extension, the Special Area of the Province will be a first objective. This is a sizable portion of the east central part of Alberta, which, owing to dryness and the quality of soil, does not submit to profitable use by ordinary cropping systems. Livestock and grass, however, can be used as a relatively profitable combination, and a more rapid development of this area is foreseen if the livestock improvement policies and ideas, which have been proven so effectively in the nearby districts of Neutral Hills and others mentioned in this article, can be successfully applied.

Unselfish and devoted service has paid off among the Neutral Hills. If Art Newman could come back and get a report of progress from Dave Lane or any of the other men with whom he was associated earlier, and if N. C. Curtis, District Livestock Supervisor at Edmonton, could tell him how proud the department is of the work that has been done in that area, and if he could learn of the growth and development of the Alberta Livestock Co-operative, he would realize that the job he had done was perhaps a better one than he knew.



WANTED: A NATIONAL SUGAR POLICY

Continued from page 6

could not understand why a beet man was not appointed Deputy Sugar Administrator instead of a man whose lifelong interest had been the importing of raw cane sugar. And they panned the wartime administration of the Sugar Stabilization Fund. In the words of President Phil Baker:

"Had the federal government followed the advice of the Canadian Beet Producers' Association, Canada's beet sugar industry would have been producing another 100,000,000 pounds of sugar a year during the time when sugar was so urgently needed in this country. All that the government needed to do was to guarantee proper returns to the beet growers, and this could have been done without extra cost to Canadian consumers. Higher returns from sugar beets would have been possible simply by giving the beet growers the money from beet sugar which the government was putting into its stabilization fund, and from which money was taken to pay for imported, high priced sugar."

IN a few words the situation in Canada is that the price of sugar is set by what imported cane sugar can be sold for. Ontario beet growers have had something to say about that too. "Quick recovery and normal expansion can be brought about only by complete decontrol and the return to a completely free sugar economy, without any government buying and selling of raw cane sugar," they allege. And their resolution to the government points out that although rationing has been abandoned and import duties restored, the government sugar administration continues the sole importer of raw cane sugar for refining, and still sets sugar prices in Canada. To which Herbert Sulkers, president of the Manitoba beet growers adds, "If the government is long in raw cane sugar bought and committed for . . . it should liquidate these raws in the same way as any other importer would do."

On the whole beet growers are not kicking too much. Alberta growers got an all-time high of \$14 a ton for their 1947 beets. The crop sold for some \$11,-000,000, which is a very handsome addition to the foothills income. But as the grower looks forward into the new year he is worried. On the other side of the road allowance his wheat growing neighbor knows what he will get for every bushel he raises. The wheat agreement, whatever its faults may be, has successfully introduced the element of price stability. The beet grower would like a taste of it too. He doesn't know what his beets are going to bring him. If the government doesn't announce a long-term policy to his liking at an early date it is generally believed that there will be a further cut in sugar beet acreage.

The beet grower's best comfort will have to come from Mr. Baker's declaration that the sugar industry in this country can prosper without government bonusing provided it gets a satisfactory statutory duty on imported cane sugar.



farm Service facts

IMPERIAL OIL LIMITED

READY TO GO . . .

Pre-season check-up of tillage and seeding machinery may add bushels per acre to the crop yield.

PRESENTED BY

One season with another, the men who harvest the biggest yields per acre in their communities are usually those who get their seed into the ground in the fewest days after the land is fit. And if you study the matter closely, you will find they are usually men who take the precaution to check up their tillage and seeding machinery before the frost is out.

Delay at seeding time almost invariably reduces crop yield because it shortens the growing season . . which is already short enough in this Northern latitude. And the principal cause of delay is the breakage of worn parts in the field and the trips to town for new parts. In catchy weather enforced idleness, due to breakage, may throw the whole seeding schedule back a full week. It pays to make sure that everything is ready to go . . . and ready to keep on going.

This precaution is doubly import-

ant in these times when machinery dealers have a none-too-plentiful supply of spare parts in stock, and you may have to wait for some new part to be shipped from the factory.



Seed Drill Check-Up . . .

Four-point attention goes a
long way to assure a good,
quick seeding job.

A pre-season check-up of the grain drill pays two ways. It helps to prevent delay at a critical time (as noted above), and it also helps to prevent uneven sowing and the resulting skips and gaps that give weeds a chance to flourish. While it is always advisable to go over the whole machine, there are four main points which call for special attention.

First, the condition of the force

First, the condition of the force feed runs or fluted feed shells. Un-less they all have the same opening, and all are free to turn, they deliver unequal quantities of seed. They can

unequal quantities of seed. They can be checked by turning the feeder shaft with a wrench, and you will quickly see whether they are okay or whether some need adjustment.

Second, the seed spouts. If they are not firmly attached, or if they are clogged or broken, they cannot deliver the seed to the bottoms of the furrows where it must go if

uver the seed to the bottoms of the furrows . . . where it must go if it is to germinate quickly and have sufficient moisture for good growth.

Third, the furrow openers. These may be out of adjustment in several ways. Double-disc openers may not meet tightly in front and if so meet tightly in front . . . and if so, they cannot make a clean furrow and much of the seed may be planted

too shallow for adequate moisture. The remedy is to adjust the scrapers ... or it may be necessary to replace the bearings ... so the discs meet tightly in front yet are able to turn freely. In fact, it is a wise move to take all double-disc openers apart, wash them out in kerosene and lubwash them out in kerosene, and lubricate well when re-assembling. Sometimes a sprung brace bar or loose bolt will cause a furrow opener to run out-of-true as it travels. That is, it may run too close to the next opener on the left and therefore too for from the next opener on the far from the next opener on the right. When the grain comes up, you find that in every drill-width across the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also also as the field some rows are too also as the field some rows. the field some rows are too close together for proper growth, and some have a wide gap between them, which is an ideal place for weeds togrow. Better to check this point, and adjust if necessary, before the drill leaves the machine shed.

leaves the machine shed.

Fourth, the pressure springs. For maximum yield, every furrow opener must sow at the required depth. If pressure on the furrow openers is uneven, some rows are bound to be sown either too deep or two shallow. It's good insurance to check the adjustment of these springs, and also the rate of seeding, during the first few rounds in the field.

One-Way Disc Seeder
A uniform stand of grain depends on three main adjust-

Where the one-way disc with seeding attachment is used for sowing grain, a study of the implement in operation will show that there are three main causes of uneven seeding. All of them can be avoided if the owner will check the following points.

owner will check the following points
First, the seed spouts. It is necessary to make sure they are the proper
length and are set at the proper
height and angle and the proper
position backward or forward to
distribute the seed evenly in the bot-

distribute the seed evenly in the bottom of the furrow.

Second, the width of cut. If the front disc takes too wide a cut, it causes a gap of several inches for weeds to grow. To remedy this, it will likely be necessary to check both the adjustment of the hitch and the setting of the wheels, in order that the entire "one-way" cuts the correct width.

Third, the machine level. For weight

Third, the machine level. For uniform depth of seeding, the front end must cut the same depth as the back. Otherwise, the result is likely to be uneven ripening, which delays combine harvesting. On heavy clay soils, one-way discs that are equipped with rubber tires are easier to operate at uniform depth than those equipped with steel wheels.

Grease Cuts Costs . . .

"As long as grease is working out of a bearing, dust can't work in."

The old saying, above, is as true today as when first stated. It applies to slow-moving parts, such as disc bearings and wheel bearings, as well as to the fast-moving parts of poweroperated machines. Good lubricants of the proper grade, applied regularly, will keep machines operating longer and at the same time reduce draft. Both of which are measures of economy.

In the case of sealed bearings, it is safer to apply moderate amounts of grease often, rather than try to force too much in at one time. Too much pressure may ruin the seals.

You can prolong the life of most implements, and reduce fuel cost per acre, by following the lubrication instructions in the manufacturer's instruction book.

Here's Something Too Good To Miss





Marvelube No. 11 GREASE



and ALEMITE GREASE GUN at a

SPECIAL LOW PRICE

This combination is the answer to your lubrication problem. Whether your machines are indoors or out in the fields, you can grease them quickly and thoroughly with one of these outfits. Easily carried anywhere.

Your choice of two guns (different price). The hand lever gun, illustrated in this column, was developed during the war for greasing military



vehicles in mobile warfare. other is a pressure gun, complete with flexible hose, which attaches to the top of the pail.

Marvelube No. 11 is the ideal lubricant for farm machines. It is bright, clear, water-resistant, soft enough to be forced through fine channels, yet has enough body for full protection.

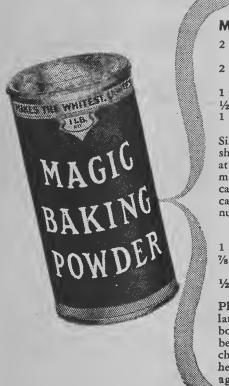
This grease-and-gun combination is being offered at a special low price by Imperial Oil Agents. Ask your local agent about it. It's worth snapping up.



Rich...light...tender_ made with Magic!

• They're sweet . . . they're sumptuous . . . they're easy to make! A really-and-truly dream dessert, these Magic Chocolate Cup Cakes are a happy ending to any meal!

The real secret of their fluffy, feathery texture is Magic Baking Powder. Pure, wholesome, dependable... Magic always helps insure perfect results. Get Magic today!



MAGIC CHOCOLATE CUP CAKES

2 cups sifted allpurpose flour 2 teaspoons Magic Baking Powder 1 teaspoon salt ½ cup shortening 1 cup sugar 2 eggs
3/4 cup milk
1 teaspoon vanilla
extract
Chocolate Frosting
10-12 halved
maraschino cherries

10-12 almond nut meats
Sift dry ingredients together. Cream together shortening and sugar; mix well. Beat in eggs, one at a time. Add milk and flour alternately to creamed mixture. Add vanilla extract. Bake in greased cup cake pans in 375°F oven, 20 minutes. Cool, top cakes with frosting. Garnish with cherries and nut meats. Makes 10-12.

CHOCOLATE FROSTING

1 unbeaten egg white 1/8 cup granulated sugar 1/2 teaspoon Magic

water
½ teaspoon flavoring
1½ squares unsweetened chocolate

3 tablespoons cold

Baking Powder ened chocolate Place all ingredients except unsweetened chocolate, flavoring and baking powder in top of double boiler. Place over boiling water and beat with beater for 5 minutes, add melted unsweetened chocolate and beat for 2 minutes. Remove from heat, add flavoring and baking powder, beat again, and spread on cake.

Mushroom Growing in B.C.

A highly developed specialty crop which has become securely established over a period of two decades

By JOAN MARLOW



Picking in an old-style mushroom house.

HE mushroom industry in the province of British Columbia had its start in the year 1928, when W. T. Money, now head of the firm which bears his name, mushroom distributors for the growers of British Columbia, commenced growing that delicacy in the vicinity of Vancouver.

The industry has now developed to the extent of about 40 mushroom farms, small and large, scattered in Vancouver and close vicinity, on Lulu Island, in Burnaby, and New Westminster. While the mushrooms are not marketed through a co-operative association, the industry is controlled more or less on a mutual basis by an organization of growers registered under the Societies Act, by the name of the British Columbia Mushroom Growers' Association. This organization, while not conducting trade activities, constitutes a collective bargaining agency between the growers and the markets.

The success of the mushroom growers' industry in British Columbia may be greatly attributed to the salesmanship of Mr. Money, his untiring efforts combined with a steadying control of the mushroom growers through their organization. They stay together loyally, marketing their product through one channel and working co-operatively with that distributing agency. They have managed so far to control themselves without a compulsory marketing board. They believe in voluntary co-operation.

This group of mushroom growers are highly skilled in their work. They have progressed beyond the stage of guess work and, while experimentation is never ended, they know their business. Their failures are almost nil, and they are successful in producing crops of mushrooms of the finest grade and quality. The growing of mushrooms is not the comparatively simple process it might seem, but is a scientific undertaking more demanding than other branches of agriculture. It requires intelligence, good business management, industry, and a knowledge of building construction, heating and electricity.

The largest portion of the mushroom crop is sold on the fresh market, extending by express shipments as far as the prairie provinces. But as the mushroom is a highly perishable commodity facilities for processing the surplus are necessary. This has been arranged for in this compact industry by the existence of the Money Canning Company Limited, an organization comprised of

the growers, W. T. Money, and a local manufacturer. A pack of mushrooms of a high standard quality is turned out.

A CONSIDERABLE investment in buildings and, for large scale profitable production, in equipment, is necessary before any commercial growing can be contemplated.

This writer has had the opportunity of being conducted through a typical mushroom plant of the Vancouver growers—a farm of the average size. This farm has five mushroom houses, three of 2,500 square feet, one of 1,500 square feet, and one of 2,740 square feet, making up, therefore, some 11,740 square feet of housing space.

Concrete floors keep buildings free from insect life, which is important in sanitation. The houses are 14 feet high, and insulated with sawdust, although the benefit of this type of insulation is questionable in this part of British Columbia as it does not become extremely cold, and the sawdust has the effect of causing rot in the walls. Conditions inside the mushroom house have such a corrosive effect on metal that this grower has found it advisable to use copper nails in all inside sheathing and bed construction.

Ventilation in the house is important -a mushroom will not grow in a damp hole. The house in general must be properly constructed, tight, capable of holding heat, well ventilated, efficiently heated and laid out to give the most convenience to the operator. A six-section Robin Hood boiler equipped with oil burner is used here for heatingfour of the five mushroom houses are so set out that they are heated from one boiler carrying the hot water through two and one-half inch mains and heating on the return through one and one-half inch coils running along both sides of each house, returning to the boiler through two and one-half inch return mains. The heat in each house is controlled by valves.

Inside the house are 12 long mushroom beds, arranged six tiers high
(three each on two floors) and five feet
six inches wide, all collapsible so they
may be taken down for changing of
earth and cleaning. To allow proper
room to pick across beds two feet one
inch is allowed for clearance. Alleys at
both sides and one in the middle of the
house between the two sets of beds are
important in the layout. The beds themselves are 40 feet long and five and onehalf feet wide. This width is designed

to give the most convenience to pickers, who are considered to have a reach of two feet nine inches. The beds are eight inches deep, allowing for six to seven inches of compost and one to one and one-quarter inches of soil.

A RELIABLE supply of good horse manure is absolutely necessary to the undertaking. The most desirable manure is from grain fed horses, with equal parts of straw and droppings. The curing shed at this mushroom farm is a 63-foot by 18-foot shelter giving ample room for a pile of manure 40 feet by 18 feet and five feet high. The roof is 14 feet high to allow passage of dump truck. Considerable time is saved in the use of labor-saving devices for convenient handling and loading into the houses of the manure.

The pile of manure is first cured, which takes about 30 days, so supplies of manure must be kept curing continuously to keep the plant in operation. One thousand, two hundred cubic yards per year of horse manure is used here. Sufficient moisture to cause fermentation is added to the manure for uniform curing, and the pile is turned every five to seven days, outside in and inside out. To assure success of the mushroom crop the curing of the manure has to be carefully controlled. To bring the alkali-acid balance down to neutral (as it goes to high alkalinity), gypsum, a non-akaline lime, is added at about the third turning (800 pounds). The gypsum in addition supplies nutrients to the medium. Its use also prevents possible occurrence of "plaster mold" which might prevent proper growth of the mushroom spawn through the manure.

Before loading, the house must be thoroughly cleaned and every bed scrubbed and sprayed with lime sulphur. When the manure has been placed in the beds the house is closed up tight and the manure left to heat of itself. This "sweat out" period takes about 10 days. The heat is allowed to run up to 135 degrees (not more than 145 degrees) and will usually of itself reach a peak heat and hold steady. This is the reason for a tight house. This second fermentation brings the manure to the right condition to receive the spawn. The heat of the manure also drives insects to the surface where a fumigation with cyanide gas or sulphur fumes will kill them. Before planting the temperature of the house is brought down to 80 degrees.

SPAWN from a pure culture, in a medium of manure or tobacco stems, is obtained from the Chester County Mushroom Laboratories, Pennsylvania, where the best spawn is grown. Since a bar of spawn culture costs only about 90 cents it is definitely advisable to procure the best, since home grown cultures might not be sanitary. These units of spawn have been inoculated from a pure culture and grown under laboratory conditions.

One unit of spawn is used to every 35 square feet, a piece of spawn about the size of a walnut being placed every eight inches just below the surface into the moisture of the compost. It takes three weeks for the spawn to grow through the beds. In the manure medium it spreads like wildfire, and little thin strands of mycelium quickly grow together into a solid spawn mass. The temperature is kept at 74 degrees for the first week and gradually dropped to a growing temperature of about 60.

A mushroom does not behave like an ordinary plant. The manure provides ideal conditions for the mycelium to spread vegetatively, but if left to itself it would never head. To induce the spawn to form mushrooms a casing soil is now spread thinly over the beds—a crumbly layer of moist, not too rich, soil spread to a depth of one and one-

quarter inches and made as level as possible. This is left for 10 to 12 days, when pin heads of mushrooms will start to come through. Watering brings on the mushrooms, first a heavy, then a finer sprinkling each day. The mushrooms come on in flushes.

The mushroom is ready to pick when it starts to form its veil, before it begins to open. Although the mushroom actually has more flavor when allowed to grow more mature, the trade prefers the closed or button mushroom, and when allowed to grow too old the grade is reduced and there is a loss in weight. Pickers go over the beds each day, carefully picking the mushrooms and placing them immediately in the refrigerator for shipping out the next day. The crop lasts two and one-half to three months, and the grower is able to tell when the thinning off of production makes it uneconomical to continue longer and it is necessary to prepare the house for another crop. Commercially about two crops a year are taken from a house. A non-commercial grower can easily carry on a crop, with decreasing production, up to seven months.

When the crop is over the old manure makes excellent garden fertilizer and is easily sold. The mycelium has rendered some of the nutrients contained more soluble. It is, however, deficient in phosphorous, but can be balanced by the addition of superphosphate. This has been found a highly popular fertilizer for gardens and lawns, being weedless, odorless and finely broken, making it easy to spread and economical.

Mention has been made of the necessity of sanitation. This is, in fact, one of the important reasons for growing mushrooms inside. Walls may be sprayed, while the crop is in, with pyrethrum dust, and a little coal oil in the small fly trap windows, where flies are attracted, will dispose of them quickly. The mushroom fly should be controlled by the use of insecticides of a nature non-poisonous to human beings.

PRAIRIE OIL RESOURCES

Continued from page 12

like Winnipeg and to the mines of Ontario would be considerable.

THE west coast, says Dr. Hume, might claim some Alberta gas. In this connection he feels that the Peace River area might find its market there, rather than the Edmonton district. Pouce Coupe has two large-capacity wells. Gas was found in a shallow well at Mile 188 on the Alaska Highway, and at Fort Nelson airport. In a structure mapped in the vicinity of the Monkman trail in British Columbia, about 50 miles southwest of Beaverlodge, Alberta, there is the largest single gas seepage known in western Canada. The structure is favorable for the finding of gas throughout the whole general Peace River area, which includes northeast British Columbia, southeast Yukon, and southwest Northwest Territories. Adequate geological exploration and drilling might make a pipeline to Vancouver an economically sound proposition.

Wells still are being drilled at the tremendously high cost of up to onehalf million dollars for one well. Conditions in the foothills are very difficult to predict on account of faulting, but considerable amounts of natural gas have been found in all this area. With our climate, a future market should be available. Canada can look forward to oil and gas exploration and production on an expanding scale. The discovery of the Leduc field could not have happened at a more opportune time. Stimulus has been provided for further exploration and drilling and there is reason to hope for the discovery of new fields.





Often a woman becomes panicky and gives way to fears and nerves—when perfectly natural changes are taking place in her system. And the unfortunate part is that these dark dreads and fears may cause a nervous breakdown... needlessly!

Plenty of sleep, fresh air, wholesome food and Dr. Chase's Nerve Food will help to build up your vitality and tone up the whole system—so that nerves and hysteria are forgotten. Yes, when you're in good shape

You'll rest better feel better. Keep your condition with the remedy which has sands of Canadia name "Dr. Chase" is your assurance.

physically and mentally—with no condition of "nerves" to magnify the slightest change—you can keep *serene* and *happy* right through the most trying times.

So remember, at the first sign of the fidgets, hysteria or nervous doubts—start building yourself up with Dr. Chase's Nerve Food. You'll rest better, look better, feel better. Keep yourself in good condition with this time-proven remedy which has helped thousands of Canadian women. The name "Dr. Chase"

Dr. Chase's
NERVE FOOD
FOR NEW PEP and ENERGY



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Simple steps to a lovelier complexion...



Try this new 4 step beauty treatment



MORNING

- 1. Bathe face with warm water. Then apply Noxzema to a wet cloth and "cream-wash" your face, massaging gently.
- 2. Apply light film of Noxzema as a soothing protective powder base to hold make-up perfectly while it helps heal.

EVENING

- 3. Repeat morning cleansing with Noxzema on wet cloth. Dry gently.
- 4. Massage Noxzema lightly into your face, using upward and outward strokes. Finger-print extra Noxzema over blemishes.

■ Want a smoother, softer, more caressable complexion? Then stop fussing with elaborate treatments, countless jars and bottles. Turn to one beauty cream—a medicated cream—Noxzema.

Use Noxzema faithfully every day ... this new, simple, 4-step-way. You'll see why it's the favorite beauty cream of Broadway actresses, professional models, attractive women everywhere. Noxzema helps heal blemishes, soothes and softens rough, dry skin, gives your complexion that "cared-for" look. Start this Noxzema 4-step treatment now ... see results in just 14 days!

... new beauty for busy hands

If your hands are chapped and rough, daily Noxzema care can help them heal so much faster—often in 8 to 10 hours. And it guards delicate skin against cold weather, hot water, hard work. Smooth on snowy, medicated Noxzema several times a day. Like invisible gloves, it keeps the busiest hands soft, white and lovely.



AT ALL DRUG AND DEPARTMENT STORES...174, 394, 594

Control of Milk for City Use

The Manitoba Milk Control Board supervised the purchase and sale of 138 million pounds in 1946-1947

HE average price of fluid milk sold in 17 Canadian cities from milk delivery wagons is probably a little less than 17 cents per quart. Since September 30, 1947, when the statistical year of the Milk Control Board of Manitoba ended, prices have increased from one to three cents per quart. The increase was three cents in Edmonton, Calgary. Saskatoon, Winnipeg, Brandon and Portage la Prairie. It was two cents per quart for Victoria, Regina, Toronto, Ottawa, London, Halifax and Montreal. It was one cent per quart in Saint John, New Brunswick, and our information is that no increase has taken place in Vancouver.

In the Winnipeg area, which includes the City of Winnipeg and the City of St. Boniface, in addition to 10 adjacent municipalities, there was a decrease of 1.4 per cent in the total amount of milk delivered during the year, which amounted to 138,702,000 pounds. Of this amount, the urban population of 310,000 consumed 115,750,000 pounds as fluid milk, a decrease of 3.3 per cent over the previous year. Of the total consumed as milk 107,375,000 pounds, or 96 per cent, was pasteurized; and the balance, 4,551,000 pounds (a decrease of 43.2 per cent from the previous year), was consumed raw.

Despite a slight reduction in total quantity, the total of money value increased by 22.4 per cent, or \$764,000 over the previous year, to a total of \$4,176,000. Moreover, a tribute to the effectiveness of the Milk Control Board in Manitoba is earned for the fact that for every dollar paid by consumers in the Greater Winnipeg area for fluid milk, 62 cents went to the producers and 38 cents to the distributor. In 1933, this distribution was 46.78 cents to the producer, and 53.22 cents to the distributor. A total of 1,179 producers and producer-distributors served the area as compared with 1,181 the previous year. Of the total number of producers, 63 per cent were members of the Winnipeg Milk Producers' Association.

Since September 30, 1946, there have been several price changes. At that time the Dominion Government discontinued the subsidy of 55 cents per 100 pounds, so that on October 1, 1946, the Manitoba Milk Control Board raised the price to producers by a similar amount, making the price for fluid milk \$3.10 per 100 pounds, basis 3.5 per cent butterfat, delivered at the plant. Beginning November 1, 1946, the price was raised by an additional 10 cents per 100 pounds. In October, 1947, increasing costs of production and distribution called for an increase in prices, and an increase of 25 cents per 100 pounds to \$3.45 was ordered for November 1. Meanwhile, however, the ceilings were removed on coarse grains by the Dominion Government, the effect of which was to further increase the cost of production by an amount calculated at 26.6 cents per 100 pounds. The price to producers was, therefore, raised by an additional 30 cents beginning on December 7, and raising the total price to \$3.75.

EACH producer supplying milk to Greater Winnipeg is licensed, and is given a quota based on the size of his herd and the needs of the distributors. A quota has no money value, and if the herd is disposed of by auction, the quota ceases. If, however, a herd carrying a quota is disposed of to another producer, the quota follows the herd. It is interesting to see from the report of the Board that in the year ending September 30, a total of 168 producers discontinued shipping milk while 157 new producers became shippers.

Every week there are problems to be

decided and matters to adjust. This is done by the secretaries of the producers' association, the distributors' association and the Milk Control Board, who meet on a specified day each week. During the year, this committee handled some 3,000 transactions; and one of the constantly recurring problems is the lack of uniformity in production from month to month. For example, in October, 1947, 50.3 per cent of the producers delivered below their quota. In November of the previous year, 57 per cent under-delivered. In June last year, only 5.1 per cent were below quota. One of the results of this under-delivery which occurs in every month year after year, is that the city must reach out farther and farther for its milk supply. As a consequence, one-quarter of the total supply must now be brought from more than 30 miles away.

Only those urban areas in Manitoba which apply for control come under the direction of the Manitoba Milk Control Board. Portage la Prairie, Brandon, and Neepawa, with a combined population of less than 30,000 are the only other centres, aside from the Greater Winnipeg area, to be controlled by the Milk Board. Approximately 10 million pounds of milk were delivered to these three centres by 103 producers.

CINCE 1932-1933, the first year the Board operated, the percentage of milk not needed for direct human consumption and therefore used for manufacturing, has varied considerably. In the first year of the Board's operations it was 16.33 per cent of all milk delivered, but in 1938-1939, it was 25.06 per cent. In all other years it has fluctuated between these two figures, running over 20 per cent in each year prior to 1940-1941, and under 20 per cent in each year since 1941-1942.

For the year 1946-1947, the average butterfat content of milk delivered to the Greater Winnipeg area was lower than in any year since 1937-1938. At no time, however, during the past nine years, has it fluctuated by as much as one-tenth of one per cent, the highest average percentage being in 1933-1934 when the figure was 3.495 per cent, and the lowest last year when it averaged 3.43 per cent. June is always the low month in the year and November the highest for butterfat, whereas the greatest amount of surplus milk is produced in June and the smallest amount in December.

The Board report covers its 15th year of operation, and the amount of milk delivered to the Greater Winnipeg area for the year 1946-1947 was 60 million pounds more than during the year 1932-1933, when the total amount was only 74,039,016 pounds. During the same period, the producer price increased from \$1.533 to \$3.191 per 100 pounds, while the distributors' spread increased from 4.5 cents per quart to 5.307 cents. In 1933, the consumer paid an average price of 8.55 cents of which the producer got 4.05 cents. In 1947, the consumer paid 13.168 cents and the producer got 7.861 cents, leaving 5.307 for the distributor.

In a city like Winnipeg, 57.32 per cent of the total milk sold for human consumption is distributed from delivery wagons to householders; 27.48 per cent is sold to stores; 12.7 per cent is sold at wholesale to large users, and 2.5 per cent to hospitals. The average Winnipegger consumes 1.041 pints of milk (including cream) daily, in addition to .027 pints of buttermilk,

Practically 50 per cent of the total was sold in pints; a little more than 10 per cent in half pints, and approximately 20 per cent each in quarts and







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The Plant Hunters

Botanical explorers in search of valuable plant species have added greatly to the wealth and beauty of their own lands

By J. M. GILROY



The late Dr. N. E. Hansen of South Dakota. one of the foremost plant hunters of his time, photographed with Supt. W. R. Leslie during one of his visits to the Morden Experiment Station.

HE towering green spires of millions of Douglas firs in the Alberta and British Columbia hills stand as eternal memorials to Douglas. This was David Douglas, a Scot and a trained botanist, who crossed the Rockies 120 years ago with a tin box of seeds on his back. He came around the Horn in a sailing vessel to admire and to see on behalf of the Royal Horticultural Society, and was the first-or one of the first-of that adventurous tribe of plant hunters who venture into the far places of the earth, to visit our own North-West.

You will find traces of them back in history for going on 2,000 years. Growing in the gardens of Lucullus, the show place of old Rome back in the very earliest days of the Christian era, were "white cherries" which he delighted to show his fellow patricians. Some Greek trader had brought them in an open galley from the Crimean peninsula, even now noted for its exotics.

War, botanically speaking, hath its victories no less than peace. We owe the lilac, the "Damask rose" and sugar cane to the mailed Crusaders of 10 centuries agone, who brought back those and other plants, shrubs and trees to thrive in the gardens of lush Sussex, sunny Provence, Brabant, the Rhineland and Lombardy.

This war business, in its botanical implications, worked in reverse too. Malaya and the Dutch East Indies became No. 1 strategical targets for the Japanese invaders in World War II on account of an English botanist who smuggled cuttings and seedlings of the rubber plant out of Brazil, nurtured them in the famous Kew Botanical gardens on the outskirts of old London. Those plants became the basis of the great rubber industry of the East Indies.

Those famous records of exploration, Hakluyt's Early Voyages of the English Nation, attest to the age-old bent of the Anglo-Saxon for growing things in gardens. Directives issued to the first traders venturing into Muscovy and Asia and the New World, all emphasize the importance of searching for and bringing home new species of plants for trial in the tight little isle.

It was thus that Raleigh brought back the batata. Now, improved out of all recognition, it is the world's leading edible vegetable, the mainstay of millions and a contender with wheat for the title of the "staff of life," though more familiarly known as "spud" and

THAT same Elizabethan swashbucklercourtier-plant-collector is credited by tradition with being the first to introduce "tobago" from the new world to

the old. Every smoker now burns incense to Raleigh's memory as his-or her-money goes up in smoke to the unconcealed pleasure of tobacco growers, revenue collectors and pipe, paper and match manufacturers. It was not always thus, though. We have the story of the faithful servant who tried, literally, to quench Raleigh's addiction to the weed by drenching his master with a bucketful of water when he saw the smoke coming out of his mouth. The dour King James and the Puritans fulminated and fumed against the "devil's weed." Now, even your Aunt Agatha thinks nothing of nonchalantly lighting up a gasper!

The Elizabethan buccaneers were playing a lone hand in the plant collecting business as a mere hobby or sideline to their main avocation of robbing rich-laden Spanish galleons. It was the East India company which was the first to systematize plant-collecting. Their stately ships brought back rare and unknown specimens from China, Japan, India and South Africa. Plant casualties in those slow voyages through the tropics were heavy. To overcome this hazard, nurseries and "staging stations" were established at Cape Town and St. Helena.

Trained horticulturists and botanists were sent to specific areas under assignment to search for plant specimens. They were scientists, and were not supposed to worry about such trifles as suspicious savages, treacherous chieftains, disease, wild animals, venomous reptiles, tough terrain. Their main problems were the factors of time and space, of long, slow voyages through the tropics as hazards against the viability of their shoots and seedlings.

Columbus himself was interested in new plant species; he is the first on record to discover the pineapple—in his own words, "A fruit resembling green pine cones, with flesh like a melon, very fragrant and sweet."

To the men sent out by the East India Company and the Dutch East India Company or the Royal Horticultural Society of Britain and Kew Gardens, we owe the discovery and knowledge of some of the choicest of the ornamental species.

More especially should we of the Canadian North-West be interested in their discoveries, for the majority of their finds were made in northeast Asia, where climatic conditions-"a continental climate"-are not unlike our own. Many of their finds were not originally suited to the prairie provinces, but through hybridization and development through the years, we are now enabled to enjoy the offsprings of the original

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ROBERT FORTUNE, for instance, who made two trips to the Orient under the joint auspices of the East India Company and the Royal Horticultural Society, gave us some strains of roses, azaleas, and above all, the popular bleeding heart. He went out in the mideighties of the last century.

If you have wondered what "Thunbergii" stands for when you see it in your seed catalog, know now that it was Carl Peter Thunberg, whom the Dutch East India Company sent to Japan away back in 1680. To him we owe some of the ornamental vines and barberries. Nearly 200 years later, the eminent Dr. Morrow, official botanist of Commodore Perry's expedition to Japan, also made interesting finds there.

John Gould Veitch gave us the golden lily from Japan and Philip Von Siebold, a Bavarian botanist, found the elegans and speciosum lily varieties. The Chinese Regal lily was given us by Ernest (Chinese) Wilson, who once had a leg crushed in an avalanche on a trip and had to be carried in a litter by Chinese coolies for hundreds of miles. His resultant injuries afflicted him for the rest of his life, but he made further trips to the high interior of China.

The freesias and gladiolus we owe to Frederick Masson, a botanist who explored the plant life of Cape Colony for Kew Gardens, back in 1772.

To come back to home grounds, it was away back in 1690 that the first written English records were made of the plant life of the Canadian North-West. This is due to the boy, Henry Kelsey, who, at the age of 16, adventured in the company of a band of redskins through Manitoba and possibly also through what is now the province of Saskatchewan. Boylike, he was most interested in something to eat, "small nutts with little cherryes very good." No doubt our wild hazelnuts and chokecherries or pincherries. In his 1691 account, he also refers to wild rice—"long high grass wch. grows in near 2 foot water this grass hath an ear like our English oats." However, there can be no doubt that Raleigh's English settlers had come across this wild cereal some decades before in Virginia.

To come down to modern times, any account like this would be incomplete which failed to mention those two modern giants of western horticulture -Dr. N. E. Hansen of South Dakota, and Dr. F. L. Skinner, of Dropmore, Manitoba. It was interesting, incidentally, in a recent issue of The Country Guide, to note how Dr. Skinner's eagle eye spotted an evonymous specimen in the northern British Columbia bush. Interesting, because it shows how the man is always seeking his heart's desire in horticulture, and because here were tidings of gladness for the plantlover who now knew that this plant was hardier than first believed.

The search now is shifting to another theatre; plant laboratories and experimental plots, where government and commercial men are testing new hybrids. For instance, the U.S. Department of Agriculture experts are experimenting with a blight-resistant chestnut hybrid to replace the native American chestnut. A Manchurian species is being used.

However, there are many fields, far and near, open to the plant hunter, from the farm woodlot to the Amazon jungles or the steppes of high Asia. Here in our own west, W. J. Boughen, of Valley River, Manitoba, found the famous "chokeless chokecherry."

And so the long story still goes on, from the Greek trader of the time of the birth of Christ, to the modern man with the microscope. Not always primarily for gain are these men working, but for protection, to—in the words of the Persian poet who asked to be buried under a rose—find some plant specimen and improve it "nearer to the heart's desire."



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World Wheat Parley

No agreement reached on price range at the time of going to press

S this issue of The Country Guide goes to press, the International Wheat Conference which opened at Washington on January 28 in a further effort to achieve an international wheat agreement has adjourned for a week to enable the British delegation to give further study to a final proposal submitted by the exporting countries.

The proposal, in brief, was that the quantity to be covered by international agreement should be 500 million bushels, for each year of a five-year period; that the ceiling price should be \$2.00 per bushel for each of the five years; and that the floor under the agreement should be \$1.50 per bushel for the first year, declining thereafter 10 cents each year, so that the minimum prices for the last four years of the period would be \$1.40, \$1.30, \$1.20, \$1.10. Under the agreements as proposed, Canada's commitments for each of the five years would be 230 million bushels to the countries entering into the agreement; that of the United States would be 185 million bushels, and that of Australia 85 million bushels.

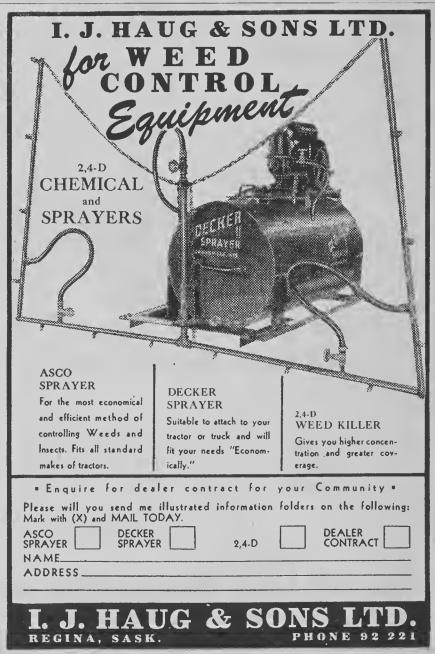
Back of this last attempt to achieve agreement between exporting and importing countries lies 30 years of growing dislocation and world wheat distribution. An agreement between 22 countries was reached in August, 1933, but was soon broken by Argentina. In 1939, 1942 and again in 1946, attempts were made without final success. Thirtyeight governments are represented at the Washington Conference.

Washington Conference opened in Washington, Sir Herbert Broadley, head of the British delegation, accepted the principle of a five-year agreement, and a ceiling price of \$2.00. Britain was also ready to accept a minimum of \$1.20 a bushel for the first four years of the agreement, but held to a minimum \$1.00 per bushel for the fifth year of the term. Exporting countries later insisted that the ceiling price should be \$2.00 for each year of the period; that the minimum for the fifth year should be \$1.10, and that each importing country should commit itself to uniform fixed quantities for each of the five years.

Canada's position is somewhat difficult by virtue of the present Canada-U.K. Wheat Agreement, which has two years to run from August 1, 1948. Canadian wheat producers have taken much less than world prices under this agreement so far in the hope of securing higher than world prices in the last two years of the agreement. Should an international wheat agreement materialize, Canada's wheat agreement with Britain would in effect be merged into the international agreement. However, the responsibility would still rest with the Canadian government of securing for Canadian wheat producers a price for their wheat during the next two years which will compensate them for the lower prices received for the crops of 1946-1947 and 1947-1948. This responsibility arises because it was the Canadian government, not the Canadian Wheat Board, which made the contract with Britain, second because the Can adian farmer has been assured that there was no provision whatever made for a ceiling in the British wheat agreement covering the last two years of the term, and because Britain has already admitted through Sir Stafford Cripps that she has been able to obtain wheat under the Canadian agreement at about half the price she would have had to pay in the United States.







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MONTHLY COMMENTARY

Continued from page 55

and Australia has contracted for export of wheat to Britain at prices much above the Canadian level and even above the level which now prevails in the United States.

The state of growing crops tended to ease food alarms. Although the winter wheat crop in the United States is still far from being out of danger, it promises a yield well above what was expected last December. In addition, the European crop situation is much better than a year ago and there are suggestions that wheat production may possibly reach 80 per cent of pre-war figures. That still leaves a great deficiency, both because of increased populations and because grain from eastern Europe is not, under present political conditions, available to the countries of western Europe.

In addition to all the above, there was a widespread feeling in the United States that prices generally, and the wheat price in particular when it was over \$3.00 per bushel, were too high.

Still other factors applied to corn. There had been a short corn crop in the United States last year, quite evidently insufficient to maintain the livestock population of the country at its former level. Producers demanded high prices, up to \$2.70 per bushel, before they would part with corn, while livestock and meat prices went up to levels that from this side of the border appeared to be fantastic. Feeders began to liquidate their livestock. The price for corn became vulnerable. Income tax considerations also played some part, for many farmers had delayed selling on such account until after the turn of the year and when prices began to fall large quantities which had been withheld were offered for sale. The result was that corn prices fell within a short time by over 60 cents per bushel.

Wheat Board to Handle Oats and Barley?

Amendments to the Canadian Wheat Board Act have been introduced at Ottawa to give authority to the Canadian Wheat Board to handle oats and barley. Until the Act has been approved by Parliament, it will be uncertain whether these powers are to be held in reserve or applied at once. If applied, it will also be uncertain on what basis western producers will be paid and also what price policy will be pursued in relation to domestic sales. There are some constitutional difficulties in the way of the Wheat Board exercising such powers and how it will be proposed to get over this will also remain uncertain.

Decision to embody these powers in the Act appears to be the result of powerful pressure exercised on the Dominion Government by eastern feeding interests. It will be recalled that when the ceiling was removed from prices of oats and barley on October 22 last, strong protests were made by feeders against the increased prices which they were called on to pay. Eastern members of parliament have been subjected to a regular barrage of resolutions demanding that feed grains be put under the control of the Wheat Board, evidently in the hope that this will mean cheaper feed.

If Parliament establishes a governmental monopoly of the handling of feed grains, the prices at which such grains are sold in Canada will inevitably be a matter of governmental policy, just as is the fixing of a price for domestic sales of wheat.

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SILVERTIP'S CHASE

Continued from page 15

his, and those hands will find the gold mine, I imagine."

"It's a dog-gone queer thing," muttered Gregor, "I never heard of anything like it."

"Neither have I," said Christian.

He stared with narrowed eyes at his companion.

"It means several things," he said.
"One is, that you're going to have your wish, Gregor."

"What wish?" asked Gregor, half frightened by the tone and the cold, calm manner of Christian.

"It means," said Christian, "that we're going to run no longer. We're going to stand our ground, and if Jim Silver overtakes us, we're going to fight it out with him. Does that suit you?"

Gregor closed his eyes and shuddered. Then, looking up again, he muttered:

"We were running for our lives a minute ago. There wasn't hardly anything to live for. But now we've as good as got a gold mine, things look different, Barry. Why should we go and chuck ourselves away on a fight with Jim Silver, just for the fun of it?"

HE waited with a puckered brow, as one who is reasonably sure of receiving a reproof, but the pale, handsome face of Christian merely smiled in return.

"I can understand that state of mind, too," he answered. "After all, Gregor, it's a pleasure to be with you. Whatever you do, you'll never surprise me. It's like listening to a twice-told tale. Well, here we are in the Blue Water Mountains, and here we stay until we find the wolf called Frosty. And on the neck of Frosty there's an iron collar, and somewhere in that collar there is the description of the location of the vein of gold. Is that clear?"

"That's clear," muttered Gregor. "Sure it is."

He added: "And Jim Silver?"

"Jim Silver," said Christian, "may have had enough hunting to suit even him. He's followed this trail until even his best friend, Taxi, was worn out and had to quit the job. And Taxi has the strength and the endurance of a wild beast, when it comes to following a blood trail. It may be that Jim Silver is not following us into these mountains. If he is following us, he expects us to try to cut straight across the summits."

"Through a storm like this?" queried Gregor.

"He knows that we've gone through worse than this, to get away from him," said Christian. "He knows that we've gone through hot hell and cold hell to get away from him, and a little feathery snowstorm like this could never stop us, I imagine he'll think. No, he'll drive straight through the mountains, and try to catch us on the other side."

"And we?" asked Gregor hopefully.
"We camp here?"

"Camp here?" asked Christian, lifting his brows with a touch of surprise. "Are you out of your head, Gregor? Stay here in this shack as if we were in a trap, in case he manages to come up with the place? That would be pretty convenient for Jim Silver, Gregor. That would be about all that he would ask out of life—to find the pair of us lodged together in one house!"

Gregor nodded.

"Well, then," he said, "you tell us what we're to do. We go on with these horses, and they freeze in the cold unless they keep travelling, and then—"

Christian raised a hand, and the other was silent.

"We have to do a little inquiring," he said. "It's as plain as can be that this dead man was a wolf trapper. It's as plain as can be that he trapped a wolf and the wolf chewed him up. We'll have to ask someone what that wolf was like."

Gregor stared helplessly.

"You ain't gone crazy, Barry, have you?" he asked.

"I don't think so."

"But look here. Who would know what that wolf is like? All wolves are about the same! Who could know what the wolf was like?"

"Because," said Christian, "he has a name—Frosty. And that means that he's a celebrity. One wolf in a million raises enough devil to get a nickname from people. You'll find that every man in these mountains knows something about Frosty, I suppose."

BLUE-GREY dusk settled down through the blackness of the trees. The falling snow pressed the evening close on the heads of the pines. In the great smother of the storm the wind whirled, above the forest, and made obscure pools of motion. It was very cold; it was growing momentarily colder, for the wind came off the higher peaks to the northwest.

But Jim Silver kept Parade to his work.

He had lost all sign of the two men he was trailing something over an hour before. He could only hope, as he had hoped so often before, that he had been able to read the minds of the fugitives, and that he could guess in what direction they were riding. He felt, on the could depend on Parade to step exactly where his master had trod before him.

As for the burning up of Silver's own strength, that did not matter. Nothing mattered except the horse. And it was this attitude of his, relentlessly enforced by practice all the way, that had enabled him to keep so close to the heels of men who were constantly picking up fresh relays of horseflesh to carry them away. Of the hundreds of miles they had travelled since the chase began—that great chase which men were never to forget—a good third of the distance had been covered by Silver on foot, with Parade following easily behind, like a dog at the heels of his master.

In rough going, of steep ups and downs, Silver actually was on foot more than he was in the saddle. He had divorced himself utterly from the usual Western viewpoint, that man is helpless on his feet and must have a saddle to hold his weight. Like an Indian, patiently, Silver was accustomed to travelling over rough or smooth until exhaustion made his head swim. Then, and only then, he gave his weight to the saddle again.

So it was that he ran down the near slope and then plodded steadily up the farther one with the head of the great horse nodding behind him. He used his eyes little, because the light was much too dim for them to be of much service. It was true that Christian and Gregor might at any moment have decided to turn back and waylay their enemy, but in that case he would trust to the wolfish keenness of the scent of Parade. The nostrils of Parade retained the wisdom they had picked up during the

ROM HELHER

"Now just remember, it was your idea ordering them air express."

whole, that the pair would try to cut straight across the Blue Water Mountains in a couple of marches.

He must follow. He felt that it would be best to strike right across to the farther side, not trying to find trail on the way, and then, in the distance, attempt to pick up the sign again. It would be very hard on Parade to make that forced march, but the stallion was whalebone and finest spring steel, and he would not fail.

This very night, they would have to camp far above timber line, in the lee of some bluff; else they would have to move slowly on, all during the night.

Silver swung down from the saddle and ran ahead, throwing the lines of the hackamore over the pommel of the saddle and leaving the stallion to follow.

follow.

In this manner he gained two advantages. One was that he took his weight off the back of the horse. The other was that he broke trail for the stallion, to a certain extent, for he

years when he had wandered as a wild horse through the mountain desert. And at the first suspicious sound or scent, he would give warning to his human companion.

BY night, also, it was better to have Parade at hand than any pair of human sentinels, no matter how keen of vision and hearing. There was a perfect partnership between the two. One was complementary to the other. Each had a perfect trust.

Silver was well up the hillside before he came out of the trees into a little clearing at the very instant when the snort and stamp of Parade warned him that there might be danger ahead. And now, vaguely outlined through the falling snow of the twilight, Silver saw the silhouette of the shack.

He held up his hand in a gesture which would force Parade to remain in place. Then he stole forward cautiously.

The shack was probably uninhabited. Otherwise it would almost surely be lighted by a fire at this time of the day; since it was not likely that its occupant might be off on a trip in such weather as this. The greatest likelihood was that it had been thrown up by some prospector or trapper, and was long since abandoned.

And yet no cautious wolf could have investigated the probable lair of a mountain lion with more care than Jim Silver showed as he advanced toward the place.

He circled the rear of it, first of all, and brought himself close to the wall, where he crouched, listening intently, shutting the noise of the storm out of his mind, and concentrating on any sound that might come out of the interior.

He heard nothing, except those mysterious breathings which the wind makes through imperfect walls.

After a time, he went to the front of the place, and found the door. It was latched, but not locked. There was a latchstring which he used, and then pushed the door open with a swift gesture and stepped inside.

The thickness of the darkness was now perfect. And around him he found the odor of cookery which was not of a very ancient date. The fumes of fried bacon will linger for a long time on the walls of a shack.

There was the smell of cookery, which proved that the shack was inhabited, or at least that it had been used not long before. That made it doubly strange to find the place empty and dark.

He felt down the wall until his hand touched a lantern. That he took off its peg, raised the chimney, and lighted the wick. Even then he was so uneasy that he made a long stride back from the light.

What he saw first was the shining white surface of the pine table on which he had placed the lantern. Next he was aware of the crazy little castiron stove, in the corner, with a rusted length of stovepipe rising above it through the roof. There were old traps piled in several places. There were battered cloths hanging along the wall. A saddle hung from a peg, a pack saddle from another. And on a bunk in the corner of the room was a man stretched out with a blanket pulled over his head, sleeping so hard, apparently, that even the noise of the lighting of the lantern had not wakened him.

"Hello!" called Silver.

Then an icy finger ran down his spine.

He stepped to the bunk and gradually drew the blanket away from an unshaven, shaggy face. The eyes of the man were partially open. There was a faint, derisive smile on his lips.

It seemed, as Silver drew the blanket completely away, that the smile of derision was directed toward the sleeper's own body, for the clothes were torn to rags on it, the left arm was frightfully gashed at the wrist, and there was a powerful tourniquet above the wound.

The right thigh was badly mangled on the inside of the leg, also, and there was another tourniquet above that injury.

The right hand lay on the chest. Silver touched it, and found it as hard and as cold as a stone. This sleeper would never waken again.

E went back to the table. By the holoodstains he saw how the wounded man had slumped across it. A pencil lay on the earthen floor, which was marked by the imprint of small heels, like those of the boots of a cowpuncher, far different from the big shoes of the dead man. There were two sets of those imprints; therefore two men had been there. They had carried the burden to the bunk. Yes, for here were the deeper signs to indicate how they had lifted and borne the weight. They had stretched him on the bunk and covered his face. Then they had gone away. Two men-Barry Christian and Duff Gregor perhaps. By the sizes of the footmarks,



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it could hardly have been any others who had visited here.

Jim Silver turned hastily to the door to remount Parade and push ahead through the storm. He was about to extinguish the lantern when he thought of the dead man again, and paused.

No matter how keen he was to pursue the trail, he could not leave the body to decay, unheeded. It might be years before another traveller penetrated to this obscure corner of the mountains.

He carried the lantern outside. The snow was still falling rapidly, and through the dim pencilings that it made in the air, he saw a perfect place for a grave, a natural hollow in the side of the slope, with plenty of loose rock about it.

He went back into the cabin, swathed the body in the blanket, and carried the rigid form outside. In the hollow he laid it with a decent gravity. He picked up a handful of gravel and let it fall gradually on the corpse.

"Whoever you may be," said Jim Silver, taking his sombrero from his head, "good hunting!"

He began to push in the large rocks. Under a yard of heavy stones he buried the stranger. Then he went inside the cabin to put out the lantern and leave it. As he put the lantern on the table, however, he noticed a portion of a side of bacon hanging in the corner near the stove, tied up by a bit of twine, as though to keep it from rats. And the sight of this puzzled him greatly. For he had every reason to think that Gregor and Christian were hungry travellers. He had pushed them hard. It was long since they had had a chance to lay in new supplies of food, and yet they had overlooked this invaluable meat! Neither were they fellows who would spare the goods of a dead man!

Deep in thought, he tapped his fingers on the white, shining surface of the table. It could not have been his coming that had frightened the pair away. They could not have seen him approaching. Something must have drawn their minds away from the thought of eating. But what is stronger in the mind of a hungry man than the desire for food?

He considered the red stains on the table, the pencil on the floor. He picked it up. It was indelible, with a very hard lead. The table drawer was partly ajar, and there was writing paper in it. It seemed plain that the dead man had been found slumped forward on the table, writing.

And that was strangest of all! For why should a man on the verge of death, so horribly torn by wolves or dogs, have sat down to spend his last moments writing? To a wife? Well, the haggard, savage face of the corpse had not been that of a sentimentalist.

Silver sat down at the table and leaned his own body above the red stains. The sensitive tips of his fingers, at the same time, slipped over impressions which had been faintly grooved in the soft surface of the wood. He put his eye almost on a level with the table top, and now he saw the dim impression of writing which had registered through the paper on the tender pine.

He went to the stove, got a bit of a charred ember of wood, and delicately drew it back and forth over the writing, until the depression stood out as lines of white in the midst of the black shading. Letters, words, appeared, some dim, but all legible, and the opening phrases were enough to make his blood leap:

DEAR ALEC: I'm done for, I got Frosty, and Frosty got me.

I've tapped open the biggest vein of gold, today, that you ever seen.

THERE was one bit of testimony which was important to Jim Silver, and that was an envelope which had been carelessly crumpled in the hand and thrown behind the stove. The address on it was "Alexander Gary, New-

lands." That name, since it was put down in the handwriting that had appeared upon the surface of the table, and since the "Dear Alec" of the table inscription suited the name on the envelope, convinced Jim Silver that he had found the man to whom the dead man had determined to make over the claim which he had discovered.

It left Silver in a quandary.

He had no doubt, now, that the great Barry Christian and his companion, Duff Gregor, were somewhere in the mountains trying to get their hands—or their guns—on a wolf sufficiently famous to have won a nickname among men. And if they succeeded, Christian would find, in a collar which had been strangely placed upon the neck of the animal by human hands, the secret of the claim's location.

In the meantime, in the town of Newlands, wherever that might be, was to be found the fellow to whom the dying man had willed his discovery.

The great problem of Silver was to get at Christian. Now he had help on the trail, because if he could find Frosty, the wolf, he would probably find Barry Christian not far off. The two things worked together. And the only complication was the existence of this man Alexander Gary.

It was no great pinching of the heart of Jim Silver to give up all hope of getting any of the gold for himself. It was not the first time that he had turned his back on fortune. Neither would it be the last. And besides, he was fascinated by the thought of that savagefaced wolf hunter, the dead man, who had sent abroad the message of his discovery tied to the neck of a wild wolf, and who, with the last of his strength, had striven to send word to this Alexander Gary, also.

That was why Jim Silver left the upper Blue Waters and went to the little town of Newlands, on the edge of the range.

In the town he learned that Alec Gary had an uncle, Bill Gary, who was well known as a ruffian and a wolf hunter. Alec Gary had, also, a job on the Chester ranch, not far from the town. The postmaster readily told him that, and Silver slipped out of the town, unobserved.

He was lucky in doing so, he felt, for during recent days more and more men knew that the rider of a great chestnut stallion *might* be Jim Silver. And when they knew the name, they knew everything else. They knew all the long story of his exploits, and that meant public applause, questions, and a surrounding atmosphere of awe which always pinched the heart of Silver and made him wish, more than ever, for the quiet of the wilderness.

He used to tell himself, over and over again, that the trail of Barry Christian was the last one that he would pursue. Once that was completed, Jim Silver would retire forever into the still peace of the mountains and live forever alone.

E thought this more than ever on h this day, as he rode out of Newlands toward the Chester ranch. He took off his sombrero and let the wind blow through his hair. At other times he dared not expose his head, if men were around, for fear that even the most casual eye would not fail to notice the two tufts of grey hair above his temples, like incipient horns beginning to thrust out. They knew his face too often as well. His picture had got into the newspapers, into the magazines. Some fool had written a life of him and told everything wrong, and gilded him brighter than gold. He had managed to wade far enough into the reading of that book to be bogged down with the lies that were told.

In fact, he knew, that he had become, in spite of himself, a public character. His reputation had even ridden farther than Jim Silver himself had gone.

As he came in sight of the Chester ranch house—a long, low building of

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unpainted boards—he put the sombrero back on his head, and he was glad of a little pool of dust that whirled down on the wind and tarnished the brilliance of Parade with grey.

When he got up to the ranch house, he tethered the horse, went to the kitchen door, and rapped.

The door was jerked open, and a woman with a red, weary face, hot from cookery, appeared before him.

She exclaimed: "Another one of you lazy, worthless rascals that calls yourselves cowboys! I'd fire every last one of you off the place, if I had my way about it. It's a crying pity, I tell Will Chester, to waste good money on the feeding of them that are no better than tramps!"

Silver tipped his hat, and now he settled it slowly back on his head.

He would have been glad to do away with the embarrassing notoriety of his celebrated name, but he hardly liked being called a tramp.

"Mrs. Chester," he said, "I'm not a tramp."

She thrust out her big red fist.

'Lemme see your hand, young man!" she demanded.

He surrendered his hand, and she rubbed a thumb over the palm of it.

"Just as I thought!" she shouted. 'Soft as the hand of a girl! And yet you call yourself a cowpuncher, do you? You got the nerve to stand there and call yourself a working man, an honest man?"

"Well," said Silver gently, "a fellow can be honest, even if he doesn't punch cows, can't he?"

"Honest doing what?" exclaimed Mrs. Chester. "Honest, my foot! Honest men have calluses on their hands, or else they're living on stolen money, is what I say. But fetch your great lazy hulk in here and set down at the table, while I get you some food. A pity, I say, though, when a woman can't be the boss in her own kitchen, but has to foller the crazy ways of her husband. Spendthrift is what he is. Spendthrift!"

"I only want to see a man who's working here," said he. "I'd like to see Alec Gary, if you know where he can be found."

"How would I know where he could be found?" she demanded. "Hurry up and come inside before all the flies in the world get into the kitchen. Ain't you got no sense at all?"

He stepped inside, removing his hat. "There—set down at that table," she

commanded. "I'll fetch you some cold pone and some cold boiled beef, to fill yourself with. There's no coffee, this time of day, but tea is—"

"Thanks," said Silver. "I don't need anything to eat. I only want to find

Alec Gary, if you'll tell me where he's probably working on the ranch."

"Alec? How would you come to know a good, hard-working, honest boy like Alec?" she asked suspiciously. "What you want with him?"

"His uncle has died," said Silver.

"A good riddance," answered Mrs. Chester. 'The great, hulking, cruel brute. There ain't going to be no tears shed about his death. Not in no part of the world there ain't!"

SHE had stepped back toward the stove, as she said this, and glancing out the kitchen window, she saw the great stallion at the hitch rack. The wind was blowing through his mane and tail, and his head was high, to look into the breeze at that moment. What Mrs. Chester saw made her turn and stare again at Silver, and he felt her eyes fix above his upon the telltale patches of grey on his temples, the hornlike spots of silver that had given him his nickname all through the world.

"Good heavens!" said Mrs. Chester. She picked up the skirt of her apron and folded her red hands inside it. "Good heavens, what have I been saying? Are you Jim Silver?"

He silently cursed the folly that had induced him to enter the kitchen where he had to take off his hat. But now he had to admit: "Yes, that's my name. Alec Gary is—"

"He's down the creek, mending fence," said she. "Mr. Silver, what'll you be thinking about a fool of a woman that—"

"Hush!" said Jim Silver smiling. "You were perfectly right. I don't know how many years have gone by since I've done an honest stroke of work."

He got out to Parade, escaping from the apologies of Mrs. Chester as well as he could, and she remained staring after him, screening her eyes from the sun with one hand until he was well down the line of the creek.

A mile from the ranch house he found a tall cowpuncher toiling over a bighandled borer with which he was drilling a series of post holes. His hat was off. His curling black hair shuddered in the sunlight with the violence of his efforts. It was the perfect picture of a man doing disagreeable work with all his might, and striving as hard for wages as though for his own interests.

He looked up as Silver drew near, and Jim Silver was relieved to see a fine, open face and an excellently shaped head. He had feared that he would look on a type like that dead savage of the mountains, Bill Gary.

He dismounted, saying: "You're Alec Gary? My name is Silver. I've brought



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you bad news and good news together. The bad part is that your uncle, Bill Gary, is dead."

He waited curiously to see the reaction, and saw the brow of Alec Gary pucker.

"Are you Jim Silver?" asked Gary. Then, he added, as Silver nodded. "I suppose this is one of the first times in your life that you've ever brought a

man bad news. It is bad news to me. Uncle Bill was a hard man, but he was pretty good to me."

Silver nodded. "I'm glad to hear that," he said. "I'll follow up with the good news, if good is what you call it. This is a copy of a letter that he wrote as he was dying. The copy runs to the point where he must have stopped writing because he died. It was a wolf that killed him. He was badly torn, Gary."

Young Alec Gary took the paper which Silver held out and scanned it carefully. He stared up into Silver's face with amazement.

"A gold mine!" he exclaimed. And for one instant the yellow flame of the gold hunger burned wildly in his eyes. Then he groaned. "Inside the collar, and on the neck of Frosty! It might as well be tied to the neck of a thunderbolt, as far as I'm concerned."

"Suppose," said Silver, "that we both try our hands on him."
"You?" said Gary. "Would you help?

Why, Mr. Silver, if you will help me, of course we'll make an even split on the

"I get profits of my own," said Silver, "and I can't take a share of anything that comes out of this."

"Why not?" asked Alec Gary, amazed.

"Because I've made a resolution, long ago, never to handle blood money."

"Blood money? This isn't a price on

a man's head."

"No," said Silver. "It's a price that your uncle has already paid. If the mine goes to you, it's all right. If I share in it, the ghost of Bill Gary will haunt me. Let's find Chester and ask him if you can cut loose for a few weeks. Or maybe it will be for months. There is a great deal that we have to talk overand the first thing is Frosty."

CHRISTIAN went to Joe Thurston, It was on record that Joe Thurston had killed a running deer at 800 yards. There was no doubt about the fact, and though a good many of the old-time hunters were likely to say that nothing but luck could account for such marksmanship, there were others who said that a man like Thurston never had luck. He was simply one of the few past masters.

But Thurston spent most of his time not in hunting with a rifle, but with a pack of dogs. To support that pack and to follow it afield, he had allowed his big ranch to go to pieces. The one thing that he valued in life, outside of an occasional brawl in a saloon, was a chance to see his pack corner a wild beast and tear it to pieces, or at least hold it at bay until his rifle settled the argument.

Joe Thurston was himself a wild beast, and perhaps that was why he understood the ways of the wilderness so very well. He was a little man, very dark, very handsome when he smiled,



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and very sinister when, in silence, he allowed his upper lip to curl a little.

He sat, on this day, on the back of a young brown gelding which he had just finished breaking. Blood was still trickling down the gored sides of his horse, and bloodstained, also, the froth that dripped from the wounded mouth of the gelding, for Thurston used a cruel spade bit that opened up like a sword when the rider jerked on the reins. A horse, for Thurston, was simply a machine that got him from one place to another. He despised sentimentality. It was not in his nature. He was forty-five. He looked a full ten or even fifteen years younger. But as many years as he had gained, his poor wife had lost. He looked more like her son that her husband.

He was overlooking the feeding of his pack. They were fed once a day, in the middle of the afternoon, and they got little, from one end of the year to the other, except raw meat. If one of them fell sick, it rarely received medicine. Either nature cured it, or soon it was brained and its carcass fed to the ravenous pack.

That pack was always ravenous. Joe Thurston knew exactly how the dogs should be fed in order to keep them in the pink of condition, thin until they were as keen as edged swords for game and food, but not thin enough to be weakened.

Barry Christian and Gregor came up at that moment and waved to the keeper of the pack.

"Are you Joe Thurston?" Christian said.

Thurston failed to turn his head. His mood was savage that afternoon. Ordinarily, he would have given some heed to a pair of big, powerful, well-mounted fellows like Christian and Gregor, but on this day he had in mind the pressing demands of certain creditors. Already his ranch was heavily mortgaged, and now it seemed that it would be wiped out. He cared nothing about the loss of land and cattle, but with the other possessions his pack would go, also. And that was a knife in his heart.

"I'm Joe Thurston," he admitted shortly.

"My name is Barry Christian," said the outlaw.

"The devil it is," answered Thurston.
"And this is Duff Gregor," said Christian.

THE head of Thurston slowly turned. He looked over the pale, clean lines of the face of Christian and at the bright, thoughtful eyes. They were a little too bright, in fact. Suddenly Thurston knew that it was Christian, indeed. And he could not help smiling. There was so much evil, so much violence in his own nature that he suddenly felt something expand and lighten in his heart.

He held out his hand, silently, and took the strong grip of the criminal. He shook hands with Duff Gregor, also, and saw that the man was a nonentity compared with his more celebrated companion. And yet any one who had dared, more than once, to play the role of Jim Silver, was worthy of some attention.

"Want something here?" asked Thurston.

"Yes," said Christian, "I want you and your dogs."

"Ah?" said Thurston.

"I'm going to hunt wolves," said Christian.

The door of the house slammed. Christian saw a girl with a face pale as stone, and shadowy, great eyes, come out on the back porch and look toward him. She turned and re-entered the house again.

"Inviting me or hiring me?" asked Thurston.

"Inviting you," said Christian.

Thurston took a quick breath. Rage had been mounting in his throat, tightening like a fist inside his gullet. Now the passion left him.

"I've hunted wolves before," said he

noncommittally. "Where do you want to pick them up?"

"In the Blue Waters, or the foothills near them," said Christian.

"That's a hard country," said Thurston. "Are you talking about Frosty?"

"That's the only wolf I've ever wanted to catch," said Christian.

Thurston narrowed his eyes.
"There's a price on the head of that

wolf," he remarked.
"I'm not hunting for the price. That goes to you. Besides, I'll add something

over and above. A thousand dollars, say"

"Well?" murmured Thurston, pinching his lips together in a smile. "I understand that Jim Silver is down there in the Blue Waters—doing good for humanity again—hunting for Frosty, the cattle thief."

"Silver is there," agreed the outlaw. "That's why I want to be there. To meet him on his own ground."

"Haven't there been times," said grim Joe Thurston, "when you weren't so glad to meet Jim Silver on any ground?"

"He's had the upper hand more than once," answered Christian. "But the fact is that there isn't room on top of the earth for the two of us. One of us has to be buried, and the time has come.

"He's in the Blue Waters hunting a wolf. Well, I'm going to be there hunting a wolf. He has a man with him. I have Gregor. If we happen to meet along the trail, it's no business of yours. Gregor and I will have to try to tend to that part of the game."

"I don't follow this," said Thurston.
"Unless you mean that it's a challenge to Jim Silver—something to make him come hunting for you?"

"You can call it that. If he comes for me, he has to meet me on my own ground, And I won't be asleep."

"It looks to me," said Thurston, "as though there might be something in this deal. I'll go one step farther. I'll admit that I need the money. That thousand—"

"I'll pay half of it on the nail the moment we shake hands," said Christian, "and the other half the instant that Frosty's dead at my feet."

"What'll you do with him?" asked Thurston curiously.

"Mount the hide. Send it somewhere to stand behind glass. A proof to the people that I've beaten Silver at at least one job."

Thurston actually laughed aloud.

"Here's my hand on the deal," he exclaimed.

Christian shook the hand. He pulled out a wallet and counted five hundred-dollar bills and put them in the fingers of Thurston.

"That binds the deal," he said.

"I'll write up the contract," said
Thurston.

"We've shaken hands," said Christian, "and that's enough."

A dull flush of pleasure worked in the face of Thurston.

"Besides," exclaimed Christian, in his gentle and persuasive voice, the very accent of courtesy, "you can't draw up a contract between yourself and Barry Christian. You can't make a contract with an outlawed man. To you, my name is simply Wilkins, and this is Murphy." He broke off to add: "I'd like to see the pack."

"Use your eyes," said Thurston, whose own politeness could not last long. He waved toward the big pens that contained the dogs.

"I don't know enough about them to see the whole truth," answered Christian.

Thurston glanced at him with an appreciative flash of the eye.

"Few men with brains enough to say they don't know," said Thurston. "Come along with me."

He moved down the line of the pens.
"There's the brains of the pack" he

"There's the brains of the pack," he said, pointing to a number of big, rangy



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pointers. "People use 'em to find birds. I use 'em to find coyotes and wolves and mountain lions. They've got the best noses in the world. They're fast, and they can run all day. I've bred 'em for speed and nose and brain. Those pointers would never point a bird in a thousand years, but they'll point a wolf. What's more, they'll hold the trail on a wolf. Yes, or a mountain lion. Whatever they've been entered on."

"What's wrong with them?" asked Christian.

"Why do you ask?"

"Nothing is perfect." Thurston grinned.

"They're too hot-headed and tender. They want to rush in and get their teeth into the game, and the wolves or the big cats open 'em up like fried beefsteak."

He went to another set of pens where were housed some of the biggest greyhounds that Christian had ever seen. They moved around with little, stilted steps, as though their muscles were sore. They were tucked up into bows. Their chests were narrow. The shoulders and thighs were overlaid with entangled whipcords.

"They're the point of the arrow," he said. "They'll run down any wolf that ever breathed almost two steps for one. If the pointers get a wolf into open sight, this gang will get up in time to mob him and hold him back until the heavy artillery gets into action. And here's the heavy artillery."

H^E indicated the next pens, where there were dogs built and furred like Scottish deerhounds, but enormously bigger. They looked made for speed and strength of running, but also there was a terrible promise in the size of the muzzles, the fangs, the huge muscles along the jaws.

"Every one of 'em," said Christian with keen interest, "looks able to do for a wolf."

"Some of 'em could kill a buffalo wolf now and then," agreed Thurston, watching the monsters with a hungry eye. "But some wolves are mean devils in a fight. No matter what's the breed or the training of a dog, a wolf seems to have more biting powers and more fighting brains and tricks. However, I'll match two of these dogs against the biggest wolf that ever lived, and three of 'em will kill the champion of the wolf world — even if his name is Frosty!"

He nodded with assurance as he said this, adding, "This breed was started by Bill Gary. You may happen to know him since you know Frosty. Frosty was what killed Gary, people say. I don't know how the story started. But Gary never managed to get out of his own stock what I've done with it. He didn't use enough persistence, enough time and money on the job. I don't care where the wolf is, I'll catch him with this pack. In open country or foothills it will be a joke. In the middle of the mountains I'll catch him or run him to earth. Frosty's hide is as good as mounted and behind glass, Christian, this very minute!"

SHE was tall. She was beautiful. She moved with a light and delicate grace. There was bright humor and good nature in her eyes. She was young. She was gay. She was foolish. And Frosty loved her the moment he set eyes on her in the moonlight of that glade.

Wolf sohg had been in the air for a long time that night, and there were notes in the singing that made Frosty wrinkle his nose and point his head at the sky and break that inviolable rule of silence which had been his for a year-since the days of his puppyhood, in fact. Now he opened his throat, and his immense bass note went booming through the canyons among the softer singing of the wind and the rumble and hollow crashing of cataracts which had been newly loosened from the long, white silence of the winter. Spring was

Frosty had not seen enough springs to know what it was that worked like electric fire through his blood But it was a thing that called him in hot haste to that mountain gorge where five big wolves moved slowly around this cream of wolf beauty, this sleek, well-furred lady of the hills.

Frosty came swiftly. He fell in love while he was still on the run, literally, and so he continued his charge. He did not even pause to touch noses with the lady and inquire after her health and happiness. He simply ran beserk among those wolves.

In fact, Frosty had been laid up all this time in order to be healed of the wounds that he had received while he was in the jaws of the trap. He was now completely recovered, and the thick fur had closed well over the scars. But he was hungry. He had been living on rabbits he had managed to surprise, on unwary squirrels, on mice, above all. He was hungry, too, for a dash of excitement. And five wolves looked just about the right number to give him a good fight, he felt.



"Jim is making so much money now he can afford to stay single."

He gave one such a tremendous shoulder wallop that the big lobo rolled a dozen yards away and let out the yell of fear and of defeat. He dived straight on under the throat of another and slashed him deeply across the breast. He nearly ripped the hamstring out of the next, and laid open the head of the fourth hero from eye to muzzle. The fifth timber wolf had seen enough, and took to his heels. The others followed as fast as they could, while Frosty, laughing his wide, red laughter, lay down and licked the blood from his white vest, and from his forelegs and forepaws. He was a very dainty and clean-living fellow, was Frosty.

The pleasure of that brief skirmish had not yet rollicked out of his heart when he saw that the lady of his dreams was sitting on a hummock with her beautiful long, bushy tail curled around her forepaws. The moment he glanced at her she rose, turned, and fled.

He followed.

She was as fast as a deer, and she went down the wind as though the devil of wolves were after her. But, fast as she was, he was a little bit faster.

Suddenly she whirled, her mane bristling, her ears twitched back, her eyes green with hatred, her fangs bared.

Frosty walked right up to that dreadful mask of hatred and sniffed at her nose. And then, suddenly, they stood back from one another and laughed two red laughters, set off with teeth that glistened just like ice.

Kind Mother Nature had brought to him a proper mate, and he could have looked his life long among his kind before he would have found one more handsome, more discreet, more prepared to learn the wisdom of hunting laws and ways.

SHE had been well raised, as wolf rearing goes. She was not the least bit of a fool, and she knew that the track of grizzly is not one to follow, and that foxes are too swift to be caught, and that their wits are even sharper than their teeth. She knew that mountain sheep are better avoided than troubled, and that small pickings will eventually make a full belly.

She knew the rain signs and the wind signs that the god of wolves hangs in the midnight blue of the sky, and she could read like type the scents that travel on the breeze. But in all the bright days of her life she never had tasted either beef or horse, and sheep were unknown to her except when the well-guarded flocks went by at a distance, always accompanied by the distressing scent of man, the great enemy, and gunpowder and steel.

When Frosty discovered that she was afraid of going out of the highlands into the hills, he sat down and looked her in the face. Then he stood up and jogged quietly on his way along the down trail.

She turned and went the other way until she found out that he would no longer follow. Then she whined like a dog for him, and afterward she sang a mournful tune. Last of all, she got to her feet and raced like the wind to catch up with him, picking his scent off the ground and then out of the air until she was at his side once more.

So they came out into the foothills, and Frosty headed straight for the biggest, the choicest, of all of his preserves. It was a ranch where there were cattle and sheep; where there were plenty of pigs and chickens, and a creamery, and poultry, including ducks and turkeys and geese, and there were rabbits, white and brown, and there were goats and beef cattle big and small, and horses, and mules, and nearly every sort of four-footed beast that one could imagine on a big Western ranch.

It was the Truman place, with an almost national reputation behind it. But Frosty, in a sense, knew that place bet-

ter than even its wise neaded owner. He had tasted of every sort of meat that his unwilling host could provide, and his track was so well-known that drawings and photographs and measurements of the tracks of Frosty were to be found in the study of John Truman. That was not all. Mrs. Truman was a very clever artist with her pencil, and several times she had seen the terrible Frosty-by starlight, by moonlight, in the dusk, and in the crystal pink of the early morning light. So she had done a number of pictures of the monster, and. in fact, Frosty was a major item of conversation in the Truman household.

T was not accident that when Frosty came out of the mountains to dine in high estate, his mate beside him, he should have travelled straight toward the greatest of danger. It was not accident, because something far from chance had brought Barry Christian and Duff Gregor and the famous pack of the Thurston dogs to the ranch of Truman.

It was known that Truman would do almost anything in the world to get rid of the cunning marauder. There was some risk that he might recognize Christian, but, as a matter of fact, he proved to be blind to everything except the manifest excellence of the dog pack of Joe Thurston. He was glad to house that pack and feed it gratis, and he hoped that Thurston would continue to stay at his house, even for a year and a day, and enjoy free board for his pack, so long as the chief business of that pack continued to be the hunting of Frosty.

They sat in the house, the four of them, and looked at the photographs of the sign of Frosty, and admired the clever drawings which Mrs. Truman had made of the devastator himself. And while they were laying their plans and deciding in what direction they had better cast through the hills and into the mountains in the hope of finding the trail of the great wolf, Frosty, in person was sliding through the fence of the southeastern section and heading straight toward the house, followed by his frightened mate.

She was, in fact, fairly blind with fear. But she was also hungry, and she came to a fresh-killed carcass.

Frosty shuddered till his mane stood up on end.

Dead meat? Eat dead meat? Not since he was a puppy—not since he had become a wolf of the world. He decided to give her a lesson. So he took her right up into the wind toward the new kill and then lay down and bade her study the scents.

A pair of coyotes, frightened from the feast, fled far away. But Frosty paid no heed to them.

The two coyotes climbed to the farther side of the draw when one of them stopped, whirled suddenly, and snapped at the empty air. The wolves could hear the teeth clash like steel against steel. The other coyote drew back and sat down to watch.

The coyote leaped up into the air, and, falling again, it twisted into a frightful convulsion. Its mate, a moment later, was caught by the same fits. In the fury of their silent agonies, it seemed as though they were fighting one another in the midst of the thin cloud of dust that they raised.

Then the two were still. One lay perfectly still on its side. The other was braced upon its forelegs, but the hind-quarters trailed on the ground as though paralyzed.

And as a small breeze moved the air, the two wolves found in it again the strange, the indescribable scent of the invisible death. Poison. Frosty's mate shrank suddenly against his side, and she snarled.

Every wise wolf knows that men are dangerous, and that they can bite from far away.

To be continued





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The Countrywoman

Farm Women Reply

PRING brings seedtime, a busy season for the farmer and his family. Last fall, in the October issue of The Country Guide, we discussed the changes which have come to country ways of living as a result of farm mechanization. We pointed out some of the problems which have arisen in organizing the routine of the household to fit in with the time schedule of the operators of the machine, the two rush seasons being spring and fall.

We said then that it would be interesting to discover what western Canadian farm women were thinking about power farming. Did they welcome it or were they concerned about the changes it was bringing? Apart from the business of feeding busy men, who attend tireless machines, there are larger questions of social changes, where one outfit may handle the work on several farms. Fewer neighbors, schools, churches, and other community gatherings may mean greater isolation for the farm families who remain on the land. Do we properly understand the economics of the machine and weigh them against the goals which the farmer and his wife set for themselves in choosing to make their home on a

The attitude of many men, who are students of agriculture, appears to be that at last farming is on an industrial basis. There seems to be a better chance for good returns for those who have the capital and the business talent and skill to farm with the aid of efficient machines.

We invited letters from farm women and asked them to write from their own observation and personal experience. Through seeing the problem on the basis of a given local area, we may hope to picture for ourselves the larger view of what power farming means. This month we publish three letters received from farm women on the subject. The views expressed are typical of the many letters received. It should be noted that the majority came from Saskatchewan, where straight grain farming is more generally practiced, than it is in either Manitoba or Alberta. The letters show that farm women are thinking about the subject.

The Price of Progress

WE live on an 800-acre farm in southern Albertaten miles from a small village-20 miles from a town big enough to boast dental, medical and hospital services. While wheat growing is our main interest, we have cattle and hogs as sidelines.

Mechanization has made our farm a one-man unit with additional help employed for harvest only. In the "horse age" the hired man who was employed for the season was a jack-of-all-trades who willingly accepted his share of chores. Today, his successor is a mechanic who looks down his nose at the lowly milk pail and pig bucket. This means that either the farmer himself must do all this work, in addition to his regular day's work in the field, or his wife and children must be pressed into service.

When we farmed with horses, we had our evening meal at a reasonable hour, summer and winter, because there is a limit to the hours that horseflesh can be worked. But the tractor, the iron horse of today, can go on indefinitely and the human being atop must push himself to the limit of his endurance. The results are long hours, late suppers, night shifts, extra lunches and fagged nerves. To the farm children it means early suppers separated from the family and to the housewife extra meals, late dishwashing and loss of leisure in the evening.

Tractor farming is essentially a young man's job. It is taking a heavy toll from older farmers who have made the change-over in middle life. Often, on neighboring farms, I have heard of boys of 12 or 14 years of age working very long hours on tractors. One wonders what price they will pay in later life for this undue physical and nervous strain.

Because of the cost of mechanization, the present tendency is towards increased acreages. Most of the land in our immediate locality is farmed by men who live at some distance . . . some live in the neighboring towns or the city. This means that neighbors are at a premium and life for those of us who remain on the land has become more isolated. This affects our community life. There are not enough children to maintain our rural schools so that pupils are transported by bus to the nearby towns. Our daughter travels 40 miles a day going to and from school. Only a farm mother knows what this means in anxious hours when the weather is cold and the road dangerous. As a community we can no longer maintain a fulltime minister and so we must go 20 miles to attend

Thoughts of spring and with seeding time at hand, farm women discuss power farming

By AMY J. ROE

church. The little red schoolhouse, once the centre of the community, is closed and we must look increasingly to the towns for social recreational and educational services. Something fine has gone from our rural life.

We cannot turn back the hands of the clock. Mechanization has come to the farming industry as surely



Song for a Poet

By GILEAN DOUGLAS

A little cloak of rhyming Is all I have to wear When the days are bitter, . When the nights are bare.

A little cloak of rhyming So multi-patched and thin, To keep out the sorrows, To keep the joys in.

Not a wrap of worldiness For two years or for three. But a little cloak of song For eternity.

Two

By NAN MOULTON

A roof and a woman and a hearth, A man and a garden and a hoe, A soft voice crooning as she moves inside, A whistle as he ends his row-One and one make two, And two make a world, you know.

Two cups, two chairs, two lives, Two heads, two hearts balance so; A woman's face by the fire at dusk, A man and his pipe in its glow-Two, this way, make one And that is a Home, you know.



as the industrial revolution came over a century ago. Yet history teaches us from ancient Greece to more modern times that any country that loses its yeomen farmers, that is the farmers who own and live on their land, suffers irrevocably. Today this is happening before our own eyes as the small farmer, unable to buy and operate the expensive machinery of modern farming, is forced by economic necessity to rent or sell his holdings. This is a big price to pay for mechanical progress.—Winifred Oldfield, Alberta.

One Who Approves

for is a little bit of heaven, that combine," my neighbor said and I agreed with her.

A few years ago, when threshing machines were used all the time, the crew sometimes only stayed a few days. Still with a family of young children, a large number of men for a few days creates more strain and stress than two men running a combine for several days longer. Hurrying children with their meals, refusing to take a minute to answer questions, shooing them out of the way because all those men must be well fed four times a day, makes the worst possible atmosphere for a young family.

The garden, canning, caring for poultry, and other odd jobs do not get neglected since there is power machinery. With the threshing machine there was usually some corn or tomatoes, ready for canning, that could not be canned because there was no time at all for them. With power machinery, the only jobs that one can barely squeeze in are sewing and mending. When the men work late, supper is about eight o'clock and there are no evenings. Evenings on the farm, except in midwinter, are and probably always will be the only time there is for sewing.

This is a mixed farming district. There are sixteen farmers operating farms. All, except two, keep cattle, pigs and poultry. A few even keep bees. Only two ever leave for the winter. The local school is still going, although it is not the social centre it once was. The majority of the young people, except those intending to farm on their own, leave as soon as they are through school. Eight of the farms are run by young couples. One man in winter and sometimes two in summer seem enough to run the farms with the machinery they now have.

Our farm is one section, situated two and one-half miles from town and two miles from a local country school. Since the farm is not overly large the men have never run their machinery at night.

The curling rink is a big drawing card for the nearby town. Most people have closed cutters in winter, cars in summer, so there is about as much social life as there ever was.

There used to be Sunday school in the local school but that has been discontinued. The people now take their children to the town where the churches, Sunday schools and young people's societies are operating quite well. In fact, owing to increased attendance at high school they are functioning better.

To a casual observer it might seem that the dwellings are not kept up as well as the machinery. Only three have electric lights, but there are many washing machines, gas irons, stoves and less expensive equipment. Perhaps our high income taxes are the reason why more improvements are not made on the

From many years of personal experience working here I would again stress my neighbor's sentiments. For the women, power machinery is "A little bit of heaven."-Mrs. L. H., Sask.

Changing Way of Life

FARMING used to be considered a way of life and rightly so, but not any more. Farming today is a highly competitive business. Tractors have lights and run all night, so do combines and trucks, and if you listen carefully they seem to say "compete, compete, compete."

Our district is a mixed farming area and will never be really profitable for straight grain growing. Most of our farmers have to live on the farm all year to care for the stock, so we have only a few town farmers and a few coast farmers who come just for the summer. Nevertheless, in a period of ten years we have lost about two-thirds of our neighbors.

The small farmer finding he cannot compete with the highly mechanized farmer, calls an auction sale, rents the land to a big farmer and moves to the city or goes to British Columbia. A few days ago a neighbor told me that no one would rent land to a horse

It is five years since we have had church service in our district. The pupils in our school have dwindled, from 23 ten years ago, to eight. The larger school unit administrators would like to close all schools with an enrolment under 14. If that happens, and it is very likely to, some pupils will have six or more miles to drive to get to another school. In the school district adjoining ours, the school has been closed for four years and practically every other house in the district is unoccupied.

We have very little social life now. There was a rink at one time and lots of card parties and dances, but there are very few young people left. They leave home almost as soon as they are through school.

The women are working harder than before. The principal reason is that it is impossible to get domestic help on the farm. Another reason is the conveniences in the home have not kept pace with the conveniences on the land, and here is the rub. An expensive machine must not be idle, so the women take over many little extra farm tasks that were formerly done by the men. Meals are more often irregular as the men usually work in shifts and meals and lunches often have to be taken out to the field.

In this business of competitive farming the main idea seems to be to accumulate enough wealth to retire off the farm. There has not been a new farm home built in the district in the ten-year period. Some houses have been moved to towns. Many are used to store grain.

The machine age is a big problem for women on western farms and they are considering it very seriously. There are only two solutions that I can offer: one would be smaller farms, rural electrification, better roads, a community centre, lovely farm homes that would mean a lot to the farm family and the community. The other solution, and it is surprising how many are considering it, is co-operative farming, where the families live in a group.—Mrs. H. T., Sask. C

O D

CONTINUOUS U

Your Kitchen and You

Study the essentials of a well planned kitchen and work to a chosen basic floor plan for efficiency

By RUTH JOHNSTON

HAT kind of a kitchen do you want? If we asked that question of 50 different homemakers, we would likely get 50 different answers. Ideas about kitchens are as individual as personalities. Where one woman might specify that she wants a kitchen which is big and roomy, another might be equally definite about wanting one which is

small and compact.

Some homemakers would include a wall ironing board as an essential. Others would prefer to use that space for a desk and a chair, a rest centre or the sewing machine. Many would insist on a dining space, while others would prefer a separate dining-room. But regardless of how women differ on such points as size of room and such items mentioned, there

is one point on which they all would likely agree. They would all want a kitchen that is conveniently arranged, or in other words, a planned kitchen.

STORAGE

The size of the kitchen is not the determining factor in efficiency. Small compact kitchens may be very difficult to work in if they are not arranged in logical step-saving sequence. A limiting item in planning the farm kitchen may be the location of the chimney. With an electric or gas stove, this factor does not enter in. With wood or coal as fuel, the location of the range may be fairly well fixed, unless you are to

have a long stretch of pipes across the room. The plan of your kitchen will be the result of the available floor and wall space, your own individual needs, and the relationship of your kitchen to the rest of the house.

THE ideal kitchen is beyond the reach of most of us. We have to work with a given space, the limitations of the shape and size of the room and the equipment on hand. Good planning will enable us to rearrange our kitchen by making the best possible use of the space available. Thus we will save much time and energy. So we propose to discuss the essentials in a well planned kitchen.

Kitchens are made up of individual work centres or areas. Any well planned kitchen has at least three such centres. The first is the storage centre. This includes the refrigerator, ice-box or dumb-waiter and cupboards. Here foods are unpacked and stored for later use. If at all possible it is best to have the centre located close to the entrance

Following, in logical sequence, next should come the preparation centre. This will include the sink, base and wall cabinets. Here the actual food preparation is carried on. Vegetables are washed, cakes mixed, salads made, and roasts prepared for the oven. This area should be free of needless cross traffic. The housewife busy with last-minute meal preparation should not have the interference of men or children coming to wash up.

It is essential that enough cabinets be provided for this busy centre. They must hold all the utensils, gadgets, mixing bowls, spoons, sharp knives, baking pans, saucepans used in everyday food preparation. Many of the staple foods will also be kept in this area, including such things as flour, sugar, spice and other baking needs. This food preparation centre is the most important centre of the kitchen. After meals it doubles up as a clean-up area for dish and pot washing. The ideal arrangement is to have wall cabinets close to the sink for handy storage of dishes. Cabinets un-

der the sink will serve to house such things as soap powders, cleansers, paper towels, wax

The third essential section of the kitchen is the cooking and serving centre. The range will be the main item here. A cabinet or counter for serving, adjacent to the stove, makes this area complete. Where possible this centre is best located near the diningroom door, or the

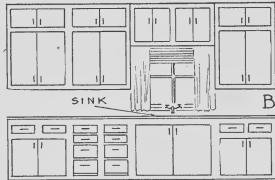
inets belonging to this area will hold such things as potholders, wooden spoons, egg lifters, spatula, lids and Many homemakers find it worthwhile items so that one set may be kept close preparation centre.

CENTRE

Now that we have itemized these kitchen essentials, you may visualize them being fitted into the well planned

paper, etc.

place where the meals are eaten. Cabother things used at work at the range. to have a duplicate set of some of these to the range, and the other at the



PREPARATION CENTRE

kitchen. Let us now see how they can be arranged in the various shaped and sized kitchens. The location of the windows and doors in your kitchen will determine the plan and so they become a limiting factor. If a kitchen is too large, one wall of cabinets may be made into a half partition from the rest of the room and so preserve an efficient working area.

There are six possible or basic floor plan arrangements of the centres mentioned which will give you a good kitchen. They are named according to the placement of the sink, range and refrigerator; the U-shape, the broken U-shape, the L-shape, the broken-L, the one-wall and two-wall kitchen plan. Which kitchen plan could be yours? All of them are well planned. Probably the U-shape or the L-shape are nearest to the ideal kitchen.

At first you may think that your kitchen could not be made to look like any of the above plans. But take another look and consider. Is there a doorway at either end of your kitchen? Could it naturally be converted into a two-wall plan? Perhaps the doorways are on one wall. Then you might consider that your kitchen could be made into a U-shape plan. If the doorways occur on two walls, it might be along the lines of the Broken-L plan. Too many doorways, windows or wall-jogs may put it into a class by itself. Perhaps you will come to the conclusion that your kitchen does not resemble any of the above plans. But before giving it up as a hopeless proposition, ask yourself these ques-

1. Could one of the doorways be closed up permanently? Sometimes it is possible to route the kitchen traffic a different way. This may provide the much-needed wall space to make a better kitchen arrangement, whereas it was a former public thorough-

2. Could the low window sills be raised to counter height? Especially in older homes, windows are often too low to allow the space in front of them to be used to advantage. By raising the sills to a 36-inch level it is then possible to place base cabinets in front of the window, thus making a bright and pleasant work surface out of what has been waste wall space.

3. Could the sink, range or refrigerator be located in a better place? Too frequently one of these will be isolated on a far wall, which means more walking for the homemaker. By relocating the one item, whether it be refrigerator, sink or range, a wellplanned kitchen becomes a possibility or a reality.

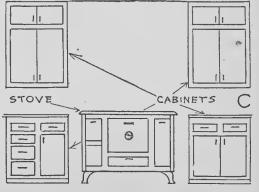
4. Would more cabinets solve the whole problem? Few kitchens have a sufficient number, properly designed for use. Cabinets with washable work surfaces should be a part of each work area. If there is a handy spot at the storage centre, close to the back door, think of all the walking which

may be saved in the one process of unpacking and storing the groceries. If there are good cabinets near the sink, where the dishes may be stored there will be little cross-tracking the kitchen when food is being prepared or washingup is done. Enough cabinets is an essential to a well-planned kitchen.

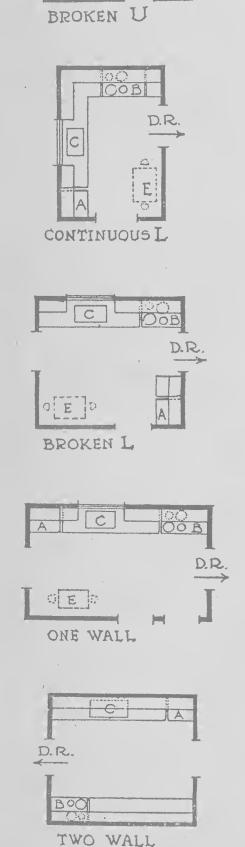
5. Could part of the kitchen be cut off and used for another purpose such as a utility room, a dining centre, a sewing or office space? Many farm kitchens are too big for easy housekeeping. The sketch shows how a large kitchen prob-

lem was solved by installing a peninsula of cabinets. This cut off one end which was formerly used for the range. The range was then brought into the newly formed U-shape kitchen and the constant stream of crosstraffic no longer interfered with the three work areas. The "after" sketch shows a dining area where a drop-leaf table was placed, where the range used to be.

After having decided on the location of the essential work centres, the homemaker must decide about the dining area location. Much depends of course upon the number of people who



COOKING AND SERVING CENTRE



Six basic types of floor plans

A—Refrigerator, ice-box or dumb-waiter, B—Stove. C—Sink. D—Drop-leaf table fastened to the wall. D.R.—Dining-room door. E—Suggested position for breakfast table.





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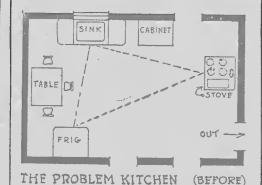
"Several years ago, I began to suffer from a very irritating bronchial cough." writes Mrs. W. Lariviere, 25 John St., Box 167, Magog, P.Q. "I tried a number of Magog, P.Q. "I tried a number of remedies but without success. Fortunately, I decided to try RAZ-MAH, and believe me I was surprised. Instead of coughing and wheezing all night, I now sleep without coughing and am able to look after my house."

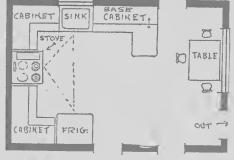
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will be eating meals. Whether this takes the form of a table and chairs, a built-in breakfast nook, or one of the new snackbar counters or simply a drop-leaf, table and collapsible chairs will depend upon the space available and the desires of the family. A good arrangement may be to have a bench seat built along one wall, so that only one row of chairs on the opposite side has to be provided for. The table when not in use may be pushed back over the bench seat.

OTHER possible centres to include if space permits would be a homemaker's planning centre with a desk for cook books, household accounts. recipe files; a sewing centre with a cab-





THE PROBLEM KITCHEN

inet for patterns; a rest centre complete with rocking chair, radio and magazine stand. If you have space to use for this extra centre, make sure that it is something especially appealing

The kitchen is above all else the homemaker's workshop, where she will spend most of her working hours. It should be planned to suit her particular needs and to save her time. Most modern kitchens are designed for work alone. The idea is that when you finish working there, you and the family get out of the kitchen, into another part of the house for enjoyment and rest.

Whether you are making the final plans for the kitchen in a new home, remodeling the one you have been using for years, or still day-dreaming about the one you would like to have, be sure to make your kitchen a planned kitchen. Be sure to plan it to suit your-

Kitchen Cupboards

New Bulletin Ready

THIS fine article, by Ruth Johnston, on kitchen planning was in type when we received a request from a reader in British Columbia saying: "Please may we have soon, some points on building cupboards, sideboards, shelves, etc., in The Country Guide."

We have published many practical articles during the past few years on various types of cabinets and cupboards, designed for home storage of dishes, food and utensils. These have dealt with proper arrangement of shelving, height of working surfaces, use of space, etc. No doubt many readers have clipped these articles and have them on hand for use when building or remodeling.

The Country Guide is happy to announce that these articles are being republished in a compact and handy bulletin form. You may secure a copy by ordering Kitchen Plans Handbook and sending 25 cents (includes postage). Address order to The Extension Dept., The Country Guide, Winnipeg, Man.





"An important part of my diet ever since my first bottle has been Crown Brand Corn Syrup. Now, that may be all right for a little character like myself, but let me tell you, these grown-ups sure are lucky what with Mom serving them Crown Brand Corn Syrup with so many of their dishes. And she uses it in her baking, too, as a sweetener. I can hardly wait until I'm old enough to have some hot waffles or pancakes smothered with delicious Crown Brand. If it's as good as it is in my cereal—mmmm!"



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Easter Entertaining

Mark the occasion with an attractive table and well chosen foods

By MARION R. McKEE



Flowers, best china and silver add grace to the Easter table.

ASTER comes next to Christmas in being a time of the year when the family gathers together under the same roof and has a reunion. Naturally food is as important as ever, and a few little extras which add to the holiday fare are essential.

As on any occasion where the family is together, the homemaker wants her time as free as possible so she can join in. Foods and dainties which may be made beforehand, or may be whipped up at a moment's notice will be the first on her list. Unexpected guests dropping in are fun if you are prepared with "quick-to-get-ready" recipes, so you can serve them attractive, tasty food without having to spend all the visiting time in the kitchen.

Selected with an eye to their ease in making are the following recipes. The Jellied Chicken and Vegetable Salad may be made the day before and served at a luncheon or as an afternoon pickup. Potatoes for the Potato Ball and Egg Salad may be boiled and mashed beforehand and then made into this tempting salad at the last minute. The Nutted Date Bars and the Ice Box Cookies are ideal to keep on hand when coffee and sweets are in order, and may be made the day before or even earlier.

For those "quick-to-get-ready" recipes the Orange Biscuits and the Meat Pinwheels are just the thing. The flour may be sifted with the dry ingredients, then the shortening cut into it, and the whole mixture kept in a cool place with just the liquid and other extra ingredients to be added before they are popped into the oven to become real appetite tempters. The Jelly Roll may take a little more time to prepare, but if time permits, it is really worth the trouble.

Easter has its own appropriate type of decoration and in setting your table for a meal or party you have a wonderful opportunity to add charm by using these. A stately Easter lily as our illustration shows, is a beautiful centrepiece, especially when surrounded by the best silver and china your household has to offer. Brightly colored eggs in a basket is another simpler table decoration, and equally as effective. Whether you are planning a party for adults or children, whether you are having a few friends drop in, or if only the family are to be present, dress up the table and menu in a manner suggestive of Easter.

Meat Pinwheels

To make a little meat go a long way, roll baking powder biscuit dough oneeighth of an inch thick, spread with creamed meat (one cup ground meat combined with two-thirds cup white sauce made with one tablespoon each of flour and butter). Roll like a jelly roll, cut in three-quarter inch slices. Bake 15 minutes in hot oven. Serve with a white sauce or tomato sauce. You may heat tomato soup for a quick sauce. These are economical and appetizing with a salad for luncheon.

Old-Fashioned Jelly Roll

¾ c. sifted cake flour ¾ tsp. baking powder ½ tsp. salt 4 eggs 1 c. jelly, any flavor 1 tsp. vanilla

Sift flour once; measure. Combine baking powder, salt and eggs in bowl. Place over smaller bowl of hot water and beat with rotary egg beater, adding sugar gradually until mixture becomes thick and light colored. Remove bowl from hot water. Fold in flour and vanilla. Turn into 15x10-inch pan which has been greased, lined with paper to within one-half inch of edge, and again greased. Bake in hot oven (400 degrees Fahr.) 13 minutes. Quickly cut off crisp edges of cake. Turn from pan at once on cloth covered with powdered sugar. Remove paper. Spread with jelly and roll. Wrap in cloth and place on rack to

Orange Biscuits

4 c. bread flour 3 T. baking powder 1 tsp. salt 1/3 c. shortening

1% c. milk 48 lumps sugar

Stir together flour, baking powder and salt, cut in shortening with a knife and add milk to make a soft dough. Roll one-half inch thick, cut out with small round cutter and place close together on a greased baking sheet. Dip lumps of sugar, one at a time into orange juice and push down into each biscuit. Grate orange rind over the biscuits and bake in hot oven. This recipe should make about four dozen orange biscuits.

Butterscotch Biscuits: Make dough as for orange biscuits. Roll thin, spread with two-thirds cup butter, creamed and mixed with one and one-half cups brown sugar. Roll up like a jelly roll, cut off pieces one inch thick, put on greased pans, and bake 15 minutes. This should make about three dozen biscuits. Chopped nuts may be added to the sugar and butter mixture.

(Turn to page 88)





family.

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HERE'S a handy recipe booklet that will help you to add a dash of excitement to your economy meals! It's filled with practical recipes for gravies, sauces and dressings... just the ideas you want to make left-overs appealing to the whole family. For your free copy of "New Uses for Heinz Sauces" just write H. J. Heinz Company of Canada Ltd., 420 Dupont Street, Toronto.



Serving Soup

Vary the basic stock recipes

PLEASING variety of luncheons and suppers is easily available when soup is the main dish around which the rest of the meal is planned. If well seasoned and served piping hot, soup will be enthusiastically received, especially in the cold weather.

Soups are also economical and use inexpensive foods which save on the budget. Less tender cuts of meat are used in the soup kettle, combined with either fresh or left-over vegetables. Beans and other meat substitutes may also take their turn to be made into delicious, hearty soups. Barley, macaroni, noodles or rice sometimes form the main ingredient with vegetables, meat and flavoring added to give a more pronounced flavor.

The cook will appreciate the way in which soup recipes may be varied according to what she has on hand. One vegetable may be substituted for another, meat added or left out, and the flavoring changed according to her desires. If she is the experimental kind the variety is unlimited.

There are two general classes of soups; those which have cream or milk as their base, and those which have meat stock as their base. The stocks from which the soups are made are of three kinds: Brown stock, which is made from beef, white stock, which is made from veal, and chicken stock, which is made from chicken or fowl. The cooking takes time, but if bottled and kept in a cool place stock will be on hand to be made into delicious soups by adding meat, vegetables or other ingredients. The stock will keep much longer if the fat is removed when cool. If a richer soup is desired this fat may be added to the soup when it is made.

Brown S
6 lbs. shin of beef
4 quarts cold water
½ c. sliced onion
½ c. diced carrots
½ c. diced turnips
½ c. diced celery and
leaves

Brown Soup Stock
beef 2-3 sprigs parsley 1 small bay leaf 2 cloves 2 cloves 2 sprig or pinch marioram 4 tsp. pepper 2 tsp. salt

Cut meat in small pieces; crack bone. Put half of meat in soup kettle, add water, let stand 30-40 minutes. Scrape marrow from bones, melt and when hot add remaining meat and brown on all sides. Add to meat and water in kettle; bring slowly to boiling point. Simmer 3-4 hours. Add vegetables and seasonings, continue simmering 2 hours. Strain and cool. Makes 3 quarts stock.

White Soup Stock
Substitute 4-5 pound veal knuckle for
the beef in brown soup stock. Do not
brown the veal. Add water, vegetables,
seasonings and proceed according to
the above recipe. (The turnip may be
omitted if desired).

Chicken Stock
Substitute a 4-5 pound fowl (cut in pieces) for beef or yeal. Omit turnip and cloves

To Clear Stock
Cool; remove hardened fat from surface. Pour the quantity desired into a saucepan. For each quart, mix in one egg white (slightly beaten) and one egg shell (crushed). Heat slowly to boiling point; boil 2-3 minutes. Remove from heat and let stand 20 minutes without stirring. Strain through double cheese cloth or a very fine sieve.

Soup bone (about 2 ½ c. green split peas lbs.) having plenty of meat and marrow Pepper

Wash soup bone, place in a large kettle, and cover with cold water, bring gradually to a boil and let simmer for one-half hour. Then add split peas and continue simmering for $2\frac{1}{2}$ hours. Replenish water as it boils away so that the bone is always covered. Season with salt and pepper and serve. Do not season until you are ready to serve the



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soup. The salt should not be added while the soup is simmering.

Liver Ball Soup

2 lbs. cubed beef brisket 2 tsp. salt 1/4 tsp. pepper 1 bay leaf 1 c. coarsely chopped celery
1½ c. canned tomatoes
1 c. carrots, sliced

Cover the beef brisket with cold water, add salt, pepper and bay leaf; simmer one hour. Add celery, tomatoes, and carrots; simmer 11/2 hours. Strain stock; force vegetables through colander: Add to meat stock. Reheat. Add liver balls.

Liver Balls

1/2 lb. ground liver 3/4 c. dry breadcrumbs 1/4 c. finely chopped parsley
1/4 tsp. celery seed 14 tsp. salt 15 tsp. pepper 2 T. flour 1 beaten egg ½ tsp. onlon juice

Combine the ingredients in the order given and chill throughout. Form in one-inch balls; drop in hot soup. Simmer 15 minutes. Serves 6 to 8.

EASTER ENTERTAINING

Continued from page 86

Nutted Fruit Bars 1 T. melted shorten-

1 c. dates 1 c. walnuts 2 eggs. well beaten 1 c. powdered sugar

ing
1 T. lemon juice
4 T. flour
1/2 tsp. salt

Chop dates and walnuts fine. Beat eggs and add powdered sugar, melted shortening, lemon juice, flour and salt. Combine the two mixtures, spread on a greased baking pan one-quarter inch thick. Bake in a moderate oven (325 degrees Fahr.) for 20 minutes. Cut in strips while hot. Roll in powdered sugar.

Vanilla Nut Ice Box Cookies 2 c. sifted flour 3 tsp. baking powder Pinch salt

½ c. butter or other shortening 1 c. granulated sugar

4 c. brown sugar, firmly packed 1 egg, well beaten ½ c. chopped nut meats ½ T. vanllla Sift flour once, measure, add baking powder and salt and sift again: Cream butter and add sugars gradually, creaming thoroughly; add egg, nuts, and vanilla, and beat well. Add flour gradually, mixing well after each addition. Shape into rolls, 11/2 inches in diameter, and roll in waxed paper. Chill overnight, or until firm enough to slice. Cut in one-eighth inch slices, bake on ungreased baking sheet in hot oven (425 degrees Fahr.) five minutes or until done. Makes about 3½ dozen cookies.

Variation: Prepare Vanilla Nut Ice Box Cookies, omitting nut meats. Divide dough in two parts. Mix one of the following into each part; one-third cup cocoanut; one-third cup finely cut dried apricots and chopped nut meats combined. Shape into rolls as directed.

Potato Ball and Egg Salad

1 c. leftover seasoned mashed potatoes

3 shelled hard-cooked eggs. sliced Cooked salad dress-ing

Form the mashed potatoes into small balls, using about one teaspoon in each ball. Chill; then arrange on each of six individal beds of lettuce. Place about three slices of hard cooked egg on each lettuce bed and serve with the cooked dressing. Serves six.

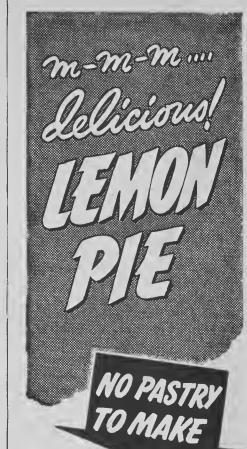
Jellied Chicken and Vegetable Salad

% c. cold water 1 T. granulated gela-½ tsp. salt

l c. mixed cooked or canned vegetables 1 c. cooked or canned oolling chicken Mayonnalse

broth 1 canned plmento

Pour the cold water into a bowl and sprinkle the gelatin on top. Add the salt and boiling chicken broth and stir until the gelatin is dissolved. Pour a thin layer of this mixture into a loaf pan 10x6x2 inches, chill slightly; then arrange on it the pimento cut in strips and add a few of the cup of vegetables, which may be peas, string beans, carrots, celery, asparagus, etc. Chill until almost firm, then arrange on it the remaining vegetables, chicken, and gelatin mixture. Chill until firm then unmold on lettuce and serve with mayonnaise. Serves six.



CRUST PART

40 Paulin's Peerless Cream Sodas (unsalted)

1/2 tablespoons of sugar

1/4 teaspoon of salt

1/2 cup of butter

Roll Soda Crackers into fine crumbs, turn into a mixing bowl, add sugar, salt and stir well. Add butter and blend as for pastry. Empty into a 10-inch pie plate—keeping out 1/2 cup of crumbs for top—with a large spoon, press and mould to shape of plate. Bake in a moderately hot oven—375 degrees—for 20 minutes. Meanwhile prepare filling.

FILLING PART

1 cup of sugar

1/2 cups of hot water

4 tablespoons of corn starch

1/2 cup of cold water

1 teaspoon of butter

1 teaspoon of butter

Rind and julce of 1/2 lemons

Pinch of salt

2 eggs, separated

Pinch of salt (additional)

2 tablespoons of sugar (additional)

Combine sugar and hot water, turn into top part of a double boller and bring to bolling point. Mix corn starch with cold water, add to mixture, stirring until mixture thickens. Add butter, rind and julce of lemons and pinch of salt. Mix well and lastly add the beaten egg yolks. Stir thoroughly and pour into the baked pic shell. Beat egg whites, add salt and sugar, mix and spread over lemon filling. Garnish with remaining crumbs and brown in a slow oven. Cool and serve.



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Work and Beauty Benefits

The homemaker accomplishes better looks for herself and her home if she whistles while she works

By LORETTA MILLER



Marian Carr of RKO pictures wraps a towel over her hair as she cleanses her skin.

HE girl or woman with busy days of work and responsibility has a better chance of keeping young in spirit and appearance than the one who has nothing on her mind. It's hustling about in the morning and facing the day's work pleasantly that makes both the home-maker and the business girl alert and interesting. It's being active, and having something on her mind other than herself, that makes the average wife a good companion to her husband, family and friends.

It has been proved many times over that it is just as easy to cultivate good habits as bad ones . . . a tip to smart women to check over their habits for those which are to be discarded. Replacing these with the right ones will pay off in good beauty dividends.

Whether the daily chores begin outside the house or in, it is well to go about the job with a song. I realize that this may sound a bit idealistic, but try it just once. Before you know it, you will be facing the day's work with a light, gay heart. If the first job in the morning isn't one you like, all the more reason to start right. The right attitude toward one's work will make the work seem easier while the results will be twofold: A job well done plus better looks. Each household job can be compared to some sport, both in action and

SCRUBBING the floor may not be the most romantic job in the world but it certainly can do a lot toward helping one maintain a good figure or get a better one. Kneeling, then stretching, and straightening the upper body while the arms are moved in wide circles, gives the shoulders and arms the same exercise as bowling. Too, as the abdominal muscles are pulled by the stretching of the torso, fatty tissue is discouraged so that spare tires around the middle are not encouraged. The upper arms are kept youthfully firm and the back is strengthened and made or kept youthfully erect. Waxing the floor or dusting it furnish the same exercise though the waxing process certainly requires more elbow grease.

Making beds, dusting, running the sweeper over the floor and tidying up are less strenuous but certainly have their place in keeping the home in order. None of these jobs will require real elbow grease, but it is the bending, stooping and stretching that is beneficial to the figure. Keeping the abdomen in while stretching the torso and moving about with back straight, and the chin tilted upward, will actually work wonders. And equally important, sing or whistle while you work.

Sweeping the floor may be a far cry from golf, but the wide swinging of the arms while holding the back straight aids in keeping the figure youthful. Waxing the floor with a long-handled waxer takes real energy, but this hard job is certainly well rewarded. It helps remove flabbiness from arms, shoulders and waistline and is beneficial to the posture if one remembers to stand correctly while wielding the waxer.

WEARING rubber gloves while doing any dirty work may be a good idea for many women, but correct care given the hands after each such chore is enough to keep them in good condition. Dry housework, such as dusting, sweeping and general picking up, all have a tendency to leave the hands dry and grimy, but a good soapy scrubbing works wonders. Scrub under and around the nail tips, then rinse off all soap and dry the hands. A palmful of lotion or hand cream massaged thoroughly over the hands will overcome any damage done by the housework. A bottle of hand lotion or jar of cream for the purpose should be kept in the kitchen, bedroom and near the washbasin and used often.

Immersing the hands too much in water may also have a slightly damaging effect on delicate hands, but correct care will quickly counteract any bad effects of the hot water. After each wet job, wash the hands well, rinse in clear water, dry, and massage on a lot of lotion or cream. Massage over the hands until every trace of corrective aid has disappeared.

A neat looking scarf or towel tied turban-fashion around the head hides the curling or setting process and protects the hair and scalp from flying dust. Then when the work is finished, the turban may be removed, and the hair is clean and completely set.

The home-maker has a better chance to take care of herself than the business girl who rushes out every morning for her eight hour stint, then rushes home at night too tired to care for herself. Keeping the complexion clear and lovely requires proper eating and correct cleaning. Eating is important to the skin because an abundance of overrich, greasy, fried, starchy foods have a tendency to make the skin coarse and oily. Surely the woman who eats at



clean it up before the company comes!"

Yes sir, Wilbur, now is the time when minutes count. But Old Dutch Cleanser will see you through! For in cleaning, both grease and dirt are problems. And with grease-dissolver for grease, plus fast-acting Seismotite for

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home can have better balanced meals than the girl who must depend upon a sandwich for her noonday lunch. And because it isn't necessary for the homemaker to wear makeup all day, she has a fine opportunity to use corrective creams or lotions to overcome faulty skin. Dust flies, however, and settles on the complexion, so the woman at home will do well to cleanse her face occasionally during the day's work.

Complexion, hair, hands and figure are actually improved by common sense measure applied by Mrs. Homemaker as she goes about her work. And the chances of retaining a youthful figure are certainly in favor of the woman who combines housework and exercise, holding her abdomen in, back straight, and chin up.

A song in the heart is certain to put a smile on the lips. The home-maker with the right attitude toward her work will find beauty for herself and her home in every housekeeping task.

When You Buy Sheets

By HARRIET MARTINSON

DURING the war years, the sheets in the linen closet were priceless as replacements could not easily be made. Now, possibly your cupboards are almost bare of supplies and you must give thought to replacements. Prices are high and you naturally want to get the most for every cent you spend on linens. For the bride starting up in housekeeping, it is most important that she know the important points to keep in mind when going shopping.

In most cases, the dollars spent on the best sheet you can get, within the personal budget range, is money well spent. One must keep in mind the length of time a sheet lasts and its constant use. Before starting out on a buying trip through the shops make up your mind what you can afford to spend and the minimum number of sheets you need. Then get the best quality you can within the range of the money you have for the purpose.

It is well to plan to have six sheets to each bed in use. With this number on hand, there may be two in the wash, two on the bed and two fresh ones in the linen closet ready for use.

Advertisements usually feature the "torn" size of all sheets. This means that the hems, plus four or five inches of shrinkage must be allowed for. Subtract that length from the length quoted. The width changes very little with a selvage so there will be practically no shrinkage to allow there.

The size of sheet to buy depends of course on the size of your bed and the manner in which you make it up. The standard bed is 78 inches long with a mattress 76 inches long and some six or seven inches thick. The width of the mattress depends on the width of the bed, which is of standard variations: Four feet, six inches; four feet; three feet, three inches, and three feet. Cots may be still narrower. Consider then how much "tuck-in" you desire to make up a bed properly.

The bottom sheet should be tucked in about a foot all the way around, for security and appearance. Top sheets tuck in about 12 inches at the bottom of the bed. Allow about an arm's length fold-over-from 15 to 18 inches -at the top, to protect the other bedding. It is an economy in saving extra washing of blankets and quilts. Also it is much more comfortable to the skin.

For the standard beds the 108-inch length sheet is best. Good widths are 81 or 90 inches. Be sure you know the actual width and thickness of the mattress of the bed for which you are buying sheets. Smaller beds require sheets in relative widths. You will have more pride in the neatness of a bed, when the sheets stay firmly in place.

Beware of cheap sheets which are often sold as "leaders" in bedding sales. Examine the texture of the material to make sure that it is firmly woven. If the sheets are "seconds" examine closely the nature of the flaw in them. Have the clerk spread it out or hold it up against a light. These are most often not good buys.

Rub a corner of the material to test

Two Cooks Luncheon Set

By ANNA DEBELLE



Design No. 800.

CAN'T you just see how attractive your table would be with this amusing tablecloth? It comes in two sizes, either bridge table size or breakfast table size. It is stamped on nice quality white linene or cream linen as you prefer. Stamped on linene 36 by 36 inches size is \$1.25. On cream linen this size is \$1.75. Stamped on linene, 36 by 54 inches size is \$1.75, on cream linen this size is \$2.50. Threads are 30 cents extra. Each cloth has four matching serviettes.

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for excessive starch or alling. If the sheet is very heavy to feel, it may wash out quite sleezy, unless the thread count is even and high to indicate quality. Ask the clerk about thread count. Thread counts should nearly equal one another for strength since that indicates the number of threads running each way, per square inch of material. Any sheet with less than 60 threads per square inch is below standard and probably is loaded with filler.

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Select your sheets with shrewdness and be happy in the new purchases which you are able to make for the linen shelf.

March Wind By Effie Butler

A busy March wind said: "I'll tell all the people, It's time for Spring cleaning From cellar to steeple.

I'll toss the dry branches Off hedges and trees, I'll rouse all the world From its Winter's ease.

I'll dust the wide prairies, Sweep hill top and plain. Then April my sister Will wash them with rain."

Visiting the Sick

BEFORE going over to visit a sick neighbor, phone to find out whether the patient would care to see you. Possibly she does not feel equal to it, especially if she had callers the previous day. Better go another time when the visit will be really appreciated.

Anyone recovering from a serious illness soon becomes exhausted, so make a point of not staying too long. Discuss good news only-avoid or skip over the latest scandal or disaster. Keep the conversation away from operations and deaths.

Be cheery, but do not talk incessantly or loudly. Watch for signs of weariness in the patient and leave before she has a chance to get tired. People who are in hospital month after month suffer from boredom, so your aim, with them, is to bring news and interests that will lift them out of themselves.

If you wish to call on a patient in the hospital, make sure in advance that the doctor approves. While visitors can do much to improve a patient's morale, there are times when only close relatives are permitted. Some hospitals have been forced to make strict rules about visiting, to protect patients from too many callers or from people who stay too long.

If your friend is very ill and is receiving no callers, she will appreciate a short, cheery note more than anything It will show you are thinking of her and yet will not be such a strain as a visit. Keep on writing at intervals to give the latest news on the home front and assure her that you do not expect a reply. This is true neighborliness.

When you do go to a hospital, stick to visiting hours and make your visit short. In the halls step quietly and talk only in a whisper. Much of the noise in hospitals could be reduced if visitors observed these rules. Wait until you are outside the building before starting to smoke. Even if your friend doesn't mind tobacco, the person in the next bed may find it stifling.-M. M. S.



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This ad is addressed to a man not over age 55 who is concerned about his future security and interested in getting a business of his own. He may be too old for heavy work, or again, he may be a young man. Perhaps his income is uncertain or not enough to meet present-day demands. He may be discouraged, but if he has good references and a car, there is a possibility of him qualifying for better than average earnings. He should forward full personal history to the advertiser, Box 200, The Country Guide, Winnipeg.



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Glamorous Gloxinias Why I choose this as my favorite plant By EFFIE BUTLER



Blossoms are trumpet shaped and regal.

IF I could have but one house plant I'd choose a gloxinia. When a gloxinia blooms it bursts forth into large regal trumpet-shaped blossoms on erect stems that reach above the foliage. The leaves are hairy, plush-like, dark green, and deeply veined. The blooms range from purest white to rose, deep crimson and royal purple.

Gloxinias can be propogated from a bulb, leaf-cutting, or seed. It is possible to purchase gloxinia bulbs from most seed houses and when doing so pot them in late fall using a soil mixture made up in the following proportions: One-half good garden loam, one-quarter rough or sharp sand, and one-quarter leaf mould. Water the soil thoroughly and set the potted bulbs in a warm, dark place. When growth starts, transfer the pots to a lighted window. An eastern exposure is ideal for gloxinias, as they cannot tolerate too hot sunshine. They do, however, like plenty of light and a warm, moist atmosphere.

Gloxinias can be grown from seeds planted in mid-winter. Germination takes from two to three weeks and when the small plants develop their second pair of leaves they should be set out in separate pots. These plants will produce strong blooms in six to eight months time.

If you already have a gloxinia and would like to increase your supply you may do so by cutting off a leaf with a portion of the leaf-stem adhering. Place the leaf in a glass of soft water so that the leaf stem is immersed in the water at all times. Set the glass in a light, but not a hot, window. A very tiny bulb with numerous roots will form at the end of the stem. Pot this leaf and bulblet in good rich, sandy loam. Water only sufficiently to keep the leaf from wilting and in two or three months time the bulblet will send up new growth. Careful watering during this period is most essential as one overdose of water may cause the new formed bulblet to rot.

When gloxinias have finished blooming the plants should be gradually dried off and the bulb allowed to rest. This can be done by lessening the water given and finally the leaves will die and dry up. To hurry this process by suddenly cutting off the water supply or by cutting off the stocks is to lessen the amount of next year's bloom. The bulb can be left in the pot or taken out and stored in a cool place until January or February of the next year when it should be re-potted. Bulbs should be watched carefully as some do not care for a long rest period, and some not at all. If any of your bulbs show signs of growth, pot them up, water, and bring them to maturity and bloom regardless of the season.

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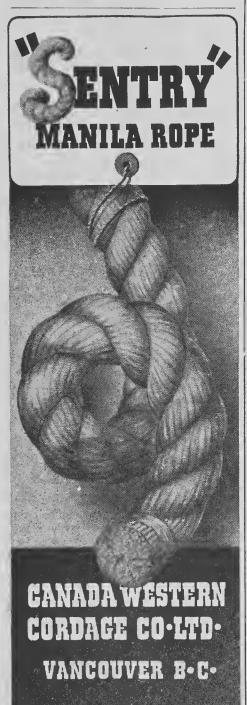


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In Pioneer Days

Feeding the family in the Sixties and Seventies

By NELL MacVICAR

ARLY Manitoba settlers could not budget in dollars and cents as we do today. Money was too scarce. They had to budget in commodities. They would total up their wheat supply, allow so much for winter porridge, so much for bannock, and the balance would probably be traded to the Hudson's Bay Company for tea, sugar or clothing.

The first Red River settlers ground their own wheat on "Quern Stanes" as they were called; a primitive mill made of two round heavy stones, the upper one worked by a handle, and grinding on the lower stationary one. These querns were used until the late sixties, when mill machinery was bought by John Hudson from one of the Garriochs of Portage la Prairie, and erected at the south end of Main Street in Portage la Prairie. The mill was temperamental, however, and would work only when a strong northwest wind was blowing. Then there was a great bustling about, the settlers streaming from all directions carrying to the mill small or large quantities of wheat.

Bannock took the place of bread until the early seventies, when John Hackett started a bakery in the Mc-Dermot Building in Winnipeg. He delivered bread to any house in the settlement at sixpence per two pound loaf. The first bannock was pretty solid stuff made of flour, water and salt. Miss Anna Henderson of Winnipeg tells this good bannock story handed down by her grandfather:

It took several weeks to travel from Red River to St. Paul and supplies of food had to be carried by the travellers. For this trip huge round slabs of bannock were baked in outside Dutch ovens. Mr. Henderson claimed they were so large and solid that, whenever a wagon wheel broke, the axle was fitted into a slab of bannock and the wagon went merrily on its way. A good tall story!

BUFFALO was the staple meat, and in the fall most of the men went to Pembina for the buffalo hunt. The best of the meat was dried and pounded to powder and made into pemmican. Buffalo grease was poured over it after the right amount of berries and sugar had been added to counteract the greasiness. The whole mass was then sewn into a buffalo skin and kept for future cooking. There were two ways to cook pemmican. It could be boiled with onions, potatoes and other vegetables, or shredded, mixed with flour and water and fried.

Here is another "tall story" told by one of the early Kildonan men: He claimed that, while on a buffalo hunt, and in the midst of a large herd of galloping animals, his horse stumbled in a gopher hole. Of course, the rider was thrown, but was saved from being trampled to death by landing on the back of a buffalo. He hung on until the animal had stampeded right through the herd and well to the outside of it. Then he stabbed the buffalo and eventually took the meat home. Pretty good story-tellers, those old timers!

All kinds of wild game, prairie chicken, duck, partridge, etc., were plentiful. The sheds and store houses of those early settlers must have looked like meat and grocery shops. Hanging from the beams were bags of pemmican and wheat; strings of dried herbs and cakes of wild berries.

The fruits were raspberries, saskatoons, and some gooseberries. They had a curious method of storing these berries. They were dried and packed in cakes for winter use. When required for cooking, a piece of berry cake was

broken off and softened. The first apples came into the country in the late sixties and oranges much later.

In the seventies, sleigh loads of large delicious white fish were brought from Lake Winnipeg and sold at an. open market in the north end of the settlement. Pork and mutton sold for two and a half pence a pound, beef for 2d, butter for 7d, and eggs for 6d a dozen. Sounds like a regular food Utopia to us today.

IN 1832 the first sheep were brought into the country. A group of Red River settlers travelled all the way to Kentucky and bought over 1,400 sheep at ten shillings a piece. Their plan was to drive this huge flock to Red River, but the journey was too difficult and hazardous; and only 251 sheep reached the settlement. As these sheep increased there was plenty of lamb and mutton, and also wool for spinning.

The years 1873 and 1874 seem to have been gala days for peddlers. Ice was sold for the first time, peddled at a high price from door to door. Luxuries such as some California fruits and other delicacies were brought overland from Moorhead in a covered wagon equipped with a stove, and sold from house to

The first candies, or "sweeties," as they were called, were brought in by the Hudson's Bay, round, flat peppermints with printing on them. Later on pails of mixed candies appeared, and how the youngsters liked them! Those of course, were luxuries and didn't enter into the family budgeting.

The water supply was carried to settlers in Winnipeg in two barrels mounted on a sled; one containing hard, the other soft water. The former came from a well in the middle of the settlement, the latter from the muddy Red River. The water was ladled out with a long-handled dipper and poured into barrels in the kitchens.

As the settlement grew, all sorts of commodities might be bought at the Hudson's Bay store. It must have looked like a regular curiosity shop carrying everything from plows to play things, candies to clothing, and furs to furniture.

Disinfecting Cisterns

In the event the water in a cistern becomes contaminated and it is impractical to empty it and clean it, the water may be disinfected by the use of calcium hypochlorite, commonly known as chlorinated lime. This material can be purchased in small sealed cans at drug stores. Only fresh material should be used as it deteriorates upon standing. To treat the water rub the dry, fresh powder with a small amount of water in a glass or porcelain cup or dish, forming a smooth, thick paste. Use about one ounce, or a moderately heaping tablespoon of the powder for each 1,000 gallons of water to be treated. A cubic foot of water contains 61/4 gallons. Stir the paste into a bucket of water and pour it into the cistern. Then, agitate the water by stirring it with a long board or paddle, or by raising and lowering a bucket on the end of a rope.

Imitation Frosting for Windows

White lead paint can be used to make imitation frosting on bathroom or other windows where you want to obstruct the view from the outside. Reduce lead paste to the consistency of buttermilk by adding turpentine. Clean and dry the glass, put a coat of the paint on the inside of the glass and stipple it with a wad of cheesecloth. It's not a bad idea to do a little practising on odd pieces of glass before starting on your windows.

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This home mixture soothes the irritated throat membranes with surprising ease. It loosens the phlegm and eases the soreness in a way that is really astonishing.

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GOLDEN BACHELOR

Continued from page 11

crowd, and we may do something wi'him—though I'm thankful the Setter Trials will be delayed until spring. We'll have trouble enough getting these spaniels ready for the fall retriever meet, three months off."

THEN one of the watchers would act as helper, going to a blind hidden in the brush with training-bird in hand and carrying a gun loaded with light shot. Rob stayed back seventy or a hundred yards, and at his signal the hidden helper shot the gun skywards and tossed the bait from the blind. The dropped spaniels quivered with eagerness, keyed to race out and make the retrieve.

"Tess!" the sharp call. "Get 'im!"

Away flashed the spaniel, long ears flapping in unison as the young female galloped across the terrain in the direction of the throw. More than likely she'd over-run in eagerness, then stumble and wheel, her nose working belatedly to locate the bird. Next moment she'd have it in mouth and come proudly back to Rob. And all the while, Old Batch the Golden Labrador would loll near Rob, watching this training game with a languid indifference. Batch had received his education in the actual hunting field, so training pigeons did not excite him in any way.

"Move back, ye fat rogue," Rob told him. "Ah, if only I could transfer some o' your thoughts to these younger dogs! But look at the lazy bulge o' your belly—I doubt me if ye'd ever run for a short

Kathie berated him about the old dog every time she saw them together. "You're being cruel to Old Batch,"

she'd scold. "Look—he's thin!"

"Och, he's a scrawny skeleton, the butter-fat old rascal," Rob said in disdain.

"How many times a day do you feed him?"

"Only once, like a sport dog needs," Rob answered. "Not every time he wags his tail, as I suspicion you did. But I didn't come here to be talkin' dogs wi' you, Lass: I've got my pay in my poke, and there's a new picture in the town and a fancy place to eat supper. Miss Stevens, will ye do me the honor?"

"Wait till I change, Rob."

"An' for why? Ye look pretty enough as is, without skirlin' my heart any worse. Did I remember to ask you to marry me?"

"Aw, now! Be serious."

"I'm always serious when I say that."
"Yes, Rob; I know. But—"

"Forget the buts, Lass. Just smile an' be friendly, without the old squabble about me gettin' another kind o' job. Come along!"

Training the spaniels for the water retrieving on the lake, Rob often used a boat and Old Batch sat in the stern as ballast. One day, toughening the dogs for swimming by making them follow the boat, Rob pushed the Golden Labrador off the stern seat and Batch splashed along in the wake.

"Aye, ye're fast as any spaniel—in the water!" Rob muttered, watching the powerful strokes of his old hunting pal. "But on land, I doubt me if ye could keep their stub-tails in sight. Still, it would do no harm to find out!"

FOR he wished he could get Batch to take part in the daily training, as example to the younger dogs. Batch knew over a score of silent hand signals used in the hunting field: The Drops and Low Dog, Go and Turn Left and Turn Right, Straight Out and all the rest of the signals which co-ordinate a hunting dog's behavior to the hunts-

man's needs. Batch remembered the whole list letter perfect, and his tail thumped every time Rob Morley fondled his favorite double-barrelled gun. But the Golden had never been used on the training field and a pigeon was just another domestic bird to him.

Thinking about that aspect of it, Rob spoke to the next group of miners who came to watch the setters working the meadow-lands.

"Has any district farmer copped a wild duck's egg-clutch last spring? 'Tis illegal, as we know, but there's bound to be a farmer who's exposed a nest when ploughing and maybe put the eggs under a biddy hen."

"Mel Roach did that," one miner volunteered. "He hatched out eight pintails, and they're big ducklings now."

"Speak to him for me," Rob requested. "If any accident happens to one o' the ducks, have him send the body at once for the training and I'll pay him well."

Meanwhile, he put Old Batch on leash when he pedalled the bicycle to give the spaniels and setters road-runs to toughen their feet. Batch, had always stayed at the cabin during such runs, but now he pelted along at the end of the leash and his easy living made him pant and suffer. Rob eased the eight-year-old dog into the routine gradually, lengthening the running distance every day. But it was merely a chore for Batch.

"Run, ye rascal!" Rob chided, noting the dog's lack of interest. "Sweat the fat off, or I'll be using a Springer Spaniel to retrieve my game this autumn—an' me a Labrador man from away back."

SLOWLY the old dog slimmed down, and Miss Kathie's scoldings became louder as Batch's rounded sleekness was replaced with a hard leanness that only a dog-man could recognize as good condition.

"Wheest, now!" Rob sought to silence her. "He's still a wee fat, but I'll admit he's slimmin' down more promisin'."

"You're mean to him!"

"I like fine when you're angry—your eyes have blue sparks in them."

"Ah, Rob: It's good to have you back!"

"Aye, but not good enough for always, eh?"

"What security would we have if we married now?"

"Human folk have never known security, except for the steady faith o' honest hearts."

"Words!" said Kathie.

"True words, Lass. But let's not fight tonight—we're going to church, mind, so we'd best get into a peaceful frame o' temper."

Mr. Parkinson was there the day Farmer Roach sent a dead pintail, killed by a prowling cat, to Rob Morley's cabin. Rob took the bird in hand, pleased that it was so fresh. He dangled it near the sleeping Batch and the duck's head touched the old dog; an audible snort came from the sleeper and suddenly Batch was wide awake, his tail thumping.

"Aye!" nodded the man. "Ye've not forgotten the scent o' game, eh?" Rob turned to the mine owner. "Mr. Parkinson, you know my plan o' wantin' to use Batch to steady the pups in training. Here's my chance to wake his spirit o' competition, but I'll need to use a spaniel and I'm not wanting to risk any I've trained. Will ye allow me to use Prince, the speedy one? I'll watch close to prevent fights, an' no harm can be done that hard-mouth doggie in other ways."

"Go ahead," Parkinson nodded. "I don't understand your plan, but go ahead all the same."

Duck in hand and double-barrel gun crooked over his arm, Rob let Prince loose from his kennel and the speedy spaniel romped in circles around the trainer and the leech-like dog, Batch,



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following close behind Morley's heels and savoring the well-remembered smell of waterfowl. Then the trainer gave the duck to a man who offered to help, and the bird was taken to an open field blind where the dogs could be seen throughout the run.

"Down here, Prince!"

The spaniel took its time, but the tail-wagging Springer finally dropped into position and turned friendly eyes on Rob as the man snapped an anchored chain to its collar. A dozen feet over, Rob turned and eyed Batch and the old dog dropped at once, knowing what was wanted. Then Morley swung his gun skywards and pressed the trigger, and Batch's tail thumped as he saw the duck sail from the blind and fall to earth. Rob hunched down near Prince's stake, putting a hand on the snap-fastening. The man made the Go signal to Batch and the old dog streaked away in a golden flash.

"Prince! Get 'im!" The snap was

Batch had a good start, but Rob knew the spaniel's speed. Within forty yards Prince was neck and neck with Old Batch. The golden dog made a race of it, striving his best against the much younger rival, but Prince was soon in the lead. Then the duck was snatched up and the spaniel dodged widely in a detour, for Batch was now fighting mad and trying to close for battle. Batch raced Prince at full gallop, delivering the chewed duck to Rob. Along came Batch, hackles up and ready for war.

"Batch! Drop!"

Still snarling, the old dog obeyed. Rob tethered Prince again and repeated the stunt. This time, spurred by jealousy, Old Batch made a speedier run than before, but the spaniel still got there first and dodged out of harm's way to deliver the duck. Rob handicapped the spaniel on the third try, which permitted Batch to nearly reach the bait before Prince flashed in and snatched it away. After resting the dogs, the trainer increased the spaniel's handicap and Batch reached the duck first and proudly brought it in. The man in the blind, under Rob's orders, substituted a training-bird on the next run, while the trainer handicapped Prince as distantly as before. Out the dogs raced and again Batch got there first, fetching in the pigeon with as much pride as if it had been a gamebird. Repeating the stunt half a dozen times. Rob finally sent out Batch alone to make sure that the lesson had taken. From then on, Batch would work at training.

R. PARKINSON was rather silent When the run was over. Rob Morley glanced at him a couple of times, then turned squarely towards his employer and said:

'You're not offended, the way I used Prince? Believe me, I've not hurt the doggie in the least."

"Oh, I know that!" the mine owner said quickly. "No offence, Rob. Ummmm —smart piece of dog work, that."

'It's an old trick," the trainer explained. "Let a dog win that way, and it does wonders for his self-respect."

"Umm! Same trick sometimes does things for a man," Parkinson commented. "Yes, and for a woman, too."

"Aye," Rob agreed, but he had already turned away to give the setters their run.

The trials were less than a month away; Tess had been ill, and was not shaping up as rapidly as Rob could have wished. However, with Batch working it was easier to teach the happy-natured spaniels the trick of turning Left, Right, and Straight Out, the young dogs hearing the verbal commands and Old Batch obeying the hand signals and showing them the example they sorely needed, Parkinson came often those days, watching from the huddle of miners and others who delighted in the wonderful dog work exhibited there on the scrublands near

Morley's cabin. Every day Old Batch strived harder, losing no chance to cut corners while the young dogs raced themselves tired. The old Golden had a marvellous nose and knew exactly what was wanted of him when Rob was back of him, and was now as eager as the spaniels to perform for Rob's praise.

"He's nothing but skin and bones!" Kathie raged. "Look at him—I can count every rib!"

"Shows what education will do for a woman."

"Oh, you!"

"I just wish ye'd go back to school, though, an' learn how to say one wee short word."

"I'll say it when you get a decent

"You're fond of dogs, too; I just can't understand why you don't approve-?" "Dogs are a fine hobby, but a man

should work at a job."

"Store house, or a mine shaft, or some such regular doings? It's not for me, Kathie. This way, I'm a free man. Even though I work for Parkinson, I do what I want. Another thing, ye've never actually seen me at work wi' the dogs. Come up the hill tomorrow and watch; perhaps you'll understand my feeling for the work. There's a real thrill, seeing the dogs dash out so clean and fast. And seeing their eyes, so bright and wanting to please all the time. No other work would give me the satisfaction this provides."

But she did not come, and Rob confided his disappointment to his friend Jim Reagan. Jim clucked in sympathy, then took his place on the knoll beside Mr. Parkinson and the others as the trainer put the puppy spaniels through a new lesson. Reagan may have said a word or two, and Parkinson is a man who knows what is going on in Coal Valley. It's his business to know, so he doesn't mind listening to a bit of idle gossip now and then.

Perhaps it was a week after that, the day when Mr. Parkinson walked with Rob back to the cabin after the training lesson was over. Every now and then the mine owner glanced again at Golden Bachelor, heeled behind Rob.

"You'd never sell Old Batch, would

Morley stared at the other, then laughed.

"Sorry, Rob! But I wasn't asking as a buyer. Umm! Money can buy a lot of things, these days, and I just wanted to be sure it couldn't buy what that dog thinks of you."

"We're pals."

"You're more than pals, my friend. You're a team. I'm trying to say something, Rob-You know I'm a dogcrazy fan; I've attended dog trials all over the country. So have you, but you've always been on the handler's position behind the dogs. There's a different perspective from the sidelines, and it's not often we see a man and a dog pair up the way you and Batch

"It's just that I'm used to dogs."

"I think it's something more. Rob, I may be presuming on our friendship, but here's what I'm driving at."

WITH that Mr. Parkinson pulled out a Field Trial Entry Blank, and he'd had his secretary type in the names of Rob Morley and Golden Bachelor and trace the dog's royal lineage back to Scotland, where the Yellow Labrador strain was first developed. All that the blank needed was Morley's signature.

"Enter the trials, Rob! Let's see you and Old Batch compete against the best in the country.'

Morley shook his head, so Parkinson talked fast and persuasively. It took a long argument, but at last Rob Morley signed his name to the paper that made the eight-year-old Batch a competitor in the Retriever Trials of the West,

"Another thing," Parkinson said, happily folding the paper away. "You'll come in my car, as usual? My wife is



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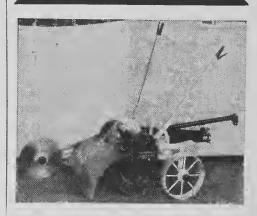
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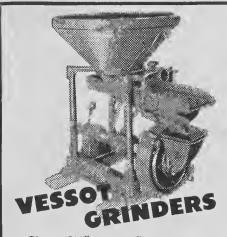
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asking Miss Kathie Stevens to accompany us-apparently she's never attended dog trials before. It'll be a nice thing for Miss Stevens to see Old Batch in action; she looked after him while you were away, I understand?"

"Aye," mumbled Rob. Parkinson smiled blandly, waving goodbye as he climbed into his car and picked up a load of miners who had watched the dogs that day.

It was something entirely new for Kathie Stevens, this huge crowd of dogloving men and women at the Trials. Nearly a thousand cars were parked in a long half circle down wind from the field, slough, and ditch terrain where the dogs would run. They left the car for the moment, roaming back and forth among the folk. Parkinson was there in front with his mink-coated wife smiling at his side, an important man and well known throughout the country. Many a stranger touched hand to hat or cap, sighting the Coal Valley magnate and his handsome wife, but many more forced themselves through the crush to shout a greeting to Rob Morley and wring his hand with warm affection. This was a dog-lovers' holiday, and Rob was among his own kind and known for his worth.

"He's entered his own dog this time," Parkinson kept telling Rob's friends. "Be sure to watch-Rob's handling his own retriever!"

"Old Batch? Rob, you're not entering an old dog like him?"

"Aye!" smiled the big trainer. "I've taken leave of my senses, right enough, but Old Batch is going to run!"

"Good for you, Rob!"

"We'll be watching. And best of luck,

"Thanks; thanks again. Hello there,

"Rob! Rob Morley! Man, it's good to see you again! Hey, Bill-here's Rob Morley!"

There was many a man and lady to meet before the loud-speaker blared out the announcement to get the dogs ready. Parkinson and the ladies returned to the car, to watch from that front line vantage position, while Rob hurried to the trucks behind the spectators' row where the dogs were waiting. In the open space between trucks and cars, men began to walk their dogs on leash. Some were proud owners, others were keen-eyed trainers. Kathie Stevens had read the names of many of the owners, famous folk from all over the country. Others she'd heard about when Rob was talking dog-names with his friends. Parkinson pointed out some of the leading figures; Neilson and his trainer, Frew, with Irish Water rattails; Westerbrook with the squareheaded Chesapeakes; Jannes — Ernie Jannes and his smart trainer, Gil Dodds, and their string of Black Labradors.

"Wonderful dogs, those-best Blacks in the country."

THE spaniels were featured first, and around to the field proceeded Fennly and his men, leading a variety of beautiful English Cockers. Austin had his American strain of the same breed, and shouted into the microphone that his dogs were going to sweep the boards. The crowd gave him a cheer for his impudence, then came a dozen fine Springers, big-footed and sturdy and laughing their jaws in their own friendly fashion.

"Watch this one! That's Stan Kovack's dog. Stan is the best Springer man in the west-some of our strain came from his kennels. . . . Look at this beauty! That's Lochinvar Lady, with Buster Jones leading her, She's a brainy one."

Then Parkinson waved his hat, while his wife cried:

"It's Rob Morley, leading Tess of Burnside!"

The contest started with Lochinvar Lady making a swift single retrieve that set a day record for time on the short courses. She was paired with the Kovack dog, who gave her worthy opposition all the way, but Tess blew up with crowd excitement and placed a low fourth to the Lady's first. Rob retrieved some honor for his employer's kennel when the puppy stakes were held, Prince's son winning top place.

Then came the main event, the Open for Retrievers. There were sandy and chocolate-coated Chesapeakes, sturdy and phlegmatic, a few of the English flat-coated retrievers, half a dozen towheaded rat-tailed Irish Water Spaniels barred from the spaniel trials because of their size, several of the Tracker-Bloodhound-Newfoundland cross called Golden Retrievers, a dozen Black Labradors eager to get going, and Rob Morley's lone Golden or Yellow Lab, Old Batch.

The dogs were run in pairs, but early in the preliminaries it developed that four individuals were star performers and led the others by a wide margin of points. The regulation single and double retrieves on land at the hundred yard range, water retrieves, and lost bird stunts were run off, several of the lesser dogs dropping out early in the contest. The judges conferred together and with the contestants, then announced that four dogs were points ahead of the rest and deserved to be re-paired and re-scored for winning places. The dogs were Ernie Jannes' Black Lab female called Banchory's Queen, a hard-working Chesapeake owned by Art Salem and listed as Dusty Boy, Ikey Cole's rat-tail spaniel called Irish Brown, and Rob Morley's Golden Bachelor. The preliminaries were over, and the judges set about to toughen the contest to select the best dog.

The land retrieve was increased in distance, re-run with single, double, and even a triple retrieve. Banchory's Queen was the speedster of the quartet, but both the Chesapeake and the Irish rattail were fast workers and the Queen's advantage over them was slight. There was no question about the eight-yearold Batch, paired with the Queen, being much slower than all the younger dogs, but at the bait-end of the run the Golden gained points. One half circle downwind, then Batch's nose nailed the bird's direction and he wasted no time getting there.

"He's slow but brainy," Gil Dodds commented, handling the Queen alongside Rob. "You've got a grand dog there, friend."

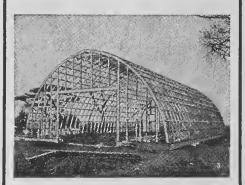
"Thanks, Gil." Rob kept his thoughts to himself, but his hand was on Batch's head, fondling the old dog's ears.

After the standard land retrieves, the judges got together again, toting their points and frowning as they compared their secret scores. After a moment they announced a trick stunt to test the dogs and handlers. One bird would be tossed from the seventy-five-yard blind, but the gunners would be in the open. closer to the dogs, and would crossshoot away from the bird's thrown direction to attempt to confuse the retrievers. Thus it was up to the handlers to show their discipline over the dogs and get them working in the right

Cole's Irish Brown had been trained to follow the line of shot sound, so this event threw the rat-tail spaniel offbalance and he was marked down for time lost in repeated starts. Art Salem's Chesapeake hunted too close to the handler, confused by the nearness of the gunner's shot. Then came the turn of the second pair of dogs, and Banchory Queen made a wide circle following the shot direction, finally working back to signal and getting her nose on the bird to romp home smartly. Rob touched Batch's shoulder as the cross-shot was fired, then pointed his arm straight out in the bird's direction. Away raced the Golden on the course indicated, glancing back once from fifty yards and wheeling Right and Straight Out as directed by Rob then. Next in-

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stant Batch's nose caught the bait-scent and he came charging back with the bird. There was no question as to which dog won that event, and the spectators cheered lustily to acclaim dog brains and smart handling.

"Nice going," commented Ikey Cole in passing, clapping Rob on the shoulder. "Wait'll we hit the water, chummy spaniel'll swim circles around you boys then."

"Aye," agreed Rob, but his grey eyes were calm as he watched the judges lead the way to the water course.

THE Chesapeake and the rat-tail retriever regained lost points on the water, both dogs being faster swimmers than either of the Labs. The Queen did all right when her turn came, but showed a trace of hesitation on the bank at starting. Old Batch couldn't begin to match the speed of the younger swimmers, but he was a straight-line worker and his hours spent with the Springers had taught him to cut his turns short. Rob had a word of praise for his retriever each time, though the other handlers gave him a glance of commiseration for the slowness of the old dog. But Rob had glanced at his wrist watch on each event and his eyes were taking on a shine of excitement -the cut corners and the straight-line tactics were paying off steadily in saved

It was on the double fifty-yard water retrieve that Batch made his greatest mistake of the day, a blunder that made Rob Morley grin with appreciative understanding. He had trained his Golden for sport purposes and his earliest water work had been on a fast, cold river where the current quickly carried away the shot ducks. Using two duck wings as training bait during Batch's puppy days, Rob had encouraged the dog to fetch in both at the one time to prevent the river current carrying away game. And now, when the doublebird event on water was featured, Old Batch remembered the time-saving element of his sport training and swam straight for the farthest of the two birds, grabbed it and surged around to make a beeline for the second bird, then neatly crossed the necks of the two heavy ducks and came puffing in with both of them trailing from his jaws. The trainer made no attempt to interfere; he might have stopped Batch's second pick-up by whistling the dog home then, but many a time during hunting seasons of the past the dog had pleased him with the double pickup stunt. So the man would not correct his dog because of a field trial rule and gave Old Batch his word of praise as he received the two birds. The spectators approved too, recognizing dog brainwork, but the judges abided by the twotrip rule of the double retrieve and Batch was low dog on that event.

"Too bad," said Art Salem.

"It's a good hunting stunt, though," approved Gil Dodds.

Rob grinned at them, making a mental subtraction but keeping his proud hand on Batch's head.

The dogs were given a rest for a few moments after the water work, the judges making the rounds from handler to handler to do some minor scoring on Obedience work-outs. Rob had nothing to worry about on those rules and his eyes took on a brighter gleam when the final events started.

"First, single bird on dry land, with water between dog and bird."

This was always a tricky number, and the Irish rat-tail, water-crazy, lost time by swimming around in mid-pond looking for a bird on the surface. Art Salem's Chesapeake was also reluctant to leave the water, but finally got the right idea and came home with a rush. Rob glanced at his watch again and remembered Batch's time on this number during the training period. He tensed a little when the judges called out for Gil Dodds and himself to bring their dogs. Banchory's Queen went directly

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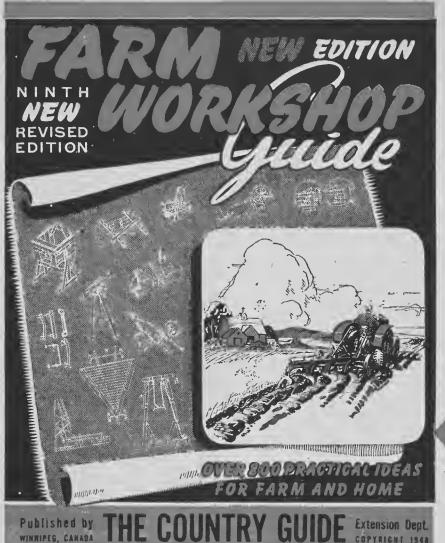
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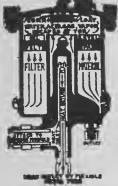


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across the pond on command, found her bird smartly enough, but hesitated on the far shore for a precious moment. Old Batch was still cutting corners and made a straight-line carry back to Rob. The man's grin grew wider as he glanced at his watch: Batch had matched the Queen's time, while his deportment was better.

"Final event, Ladies and Gentlemen. Double bird retrieve, with the same water barrier."

Rob was anxious about this, wondering if Batch would try another doublecarry. The other pair started, and the Chesapeake blew his second retrieve entirely and stayed on the water swimming around and around until finally Art Salem had to whistle him home in disgust. Irish Brown had an unlucky streak on this event, over-running his first bird twice without locating it. Then came the second pair of dogs, the Queen making a fast trip for her first bird but hesitating on the far bank the second time, racing back and forth along the shoreline as though seeking a dry land route back to her handler. Batch surged across the pond in a beeline, glanced once at Rob from the far bank and obeyed the Left Turn signal and bolted away, re-appearing at full gallop with a single bird in mouth and hitting the water at top speed. Rob uttered a fervent sigh of relief, taking the bird from Batch and sending him out a second time. Eighty-four seconds after the Go signal had been given, Old Batch delivered the second of the two birds into Rob's ready hand.

"You've given them a contest, boy!" the man whispered. "You're all right!"

Batch uttered a brief yelp, wagging

There was the usual tense wait while the judges compared scores.

"Ladies and Gentlemen, winner of the Open Retriever Trials is Rob Morley's Golden Bachelor, a crowd favorite right from the start. Second place, three points behind the winner, Ernie Jannes' Banchory's Queen handled by Gil Dodds. Third place, five points behind the Queen, Art Salem's Chesapeake, Dusty Boy. Fourth place, one point behind Dusty Boy, Ikey Cole's Irish Water Spaniel called Irish Brown. Ladies and Gentlemen, this is the first time Rob Morley has ever entered his own dog in a Field Trial Contest though he's handled many a dog belonging to others at Trials of the past. Rob's entry is an eight-year-old Golden Labrador who behaved like a champion all the way through, making up in headwork what he lacked in youthful speed. Come out in front here, Rob. Ladies and Gentlemen—The Winners!"

ATHIE STEVENS had already yelled herself hoarse, but she managed to swell the shout that went up from the spectators and was helped by the beaming Parkinson and his lady. Rob Morley removed his hat and waved it, with Old Batch fanning his tail beside him. Then

Rob said a word to his dog, and Batch put his paws on Rob's broad chest and received the bear-hug that was his due, the crowd cheering them again and again.

At that moment Parkinson hurried away on an unexplained errand, but someone saw him talking to Ernie Jannes and shortly after that Jannes was with Rob Morley.

Jannes was talking business: "Take Banchory's Queen home with you, like I say, and start your own kennel right away. As pay, I'll take one pup from each litter produced from her and your champion. Mister, I'm loaning her to you for a reason: I know an unbeatable combination when I see one, and this'll start a strain of black and golden winners that'll keep the country Lab-keen for years. Another thing, I'll have buyers ready for the pups, at stiff prices. too. Rob, I'm proud to take a licking from a man like you and a dog like Old Batch!"

Parkinson was there in the background, smiling his delight as the proposition was accepted. He crowded in then, two other dog men right beside him, laying cash on the line to book the first available pups.

But all this was anti-climax and the ladies did not even know it was happening. Kathie had tears of happiness streaming down her cheeks; the old doubts had gone forever as she watched Rob Morley with his own crowd, and she was eager to tell him so. It was Mrs. Parkinson, showing a shrewd sense of timing, who urged Kathie through the barrier ropes in front of the cars.

"Kathie!" Rob saw her coming and advanced to meet her.

"Rob! Rob, darling-no more arguments from me!"

"D'ye know the word?"

"Yes!"

Next moment she was in his arms, oblivious to the watchers as the crowd roared its complete approval.

PEACE TOWER

Continued from page 17

So Mackenzie King knows all this, and he knows that you might as well sit down behind a strawbuck in Yellow Grass, Saskatchewan, and try to settle the world's problems as to try and solve the high cost of living by parliament.

The price probe committee is the magician rolling back his sleeves, to say there is nothing there. But some day this year, Mr. King is going to pull that rabbit out of his hat. What it will be, I don't know. But it will make us forget about the price probe, make us look at something new. This is Houdini King's last year, and this rabbit will be his last rabbit. All I say is: Don't ask me anything more about the rabbit. All I know is that he's got one in the hat.



A winter scene near Whitehorse, Yukon Territory. Photo by R. W. Stevenson, Percival, Sask,



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The Country Boy and Girl

Angelina Applebud

By MARY E. GRANNAN

NGELINA Applebud was a little doll. They called her Angelina because it was a pretty name. They called her Applebud because she had a red nose. Angelina's nose was as red as any apple that ever grew on an apple tree. Angelina was most unhappy about her nose. Whenever her little mistress took her out in the doll carriage, Angelina would snuggle down under the covers, hoping no one would see her.

But whenever her mistress met anyone. she would say, "Would you like to see Angelina today?"

"Oh, yes," would come the answer, and then someone would gasp, "My isn't she the funny little doll? Her nose is so red!"

The day the milkman laughed so hard at her nose, was the day Angelina made up her mind to run away.

"I'm going to run away," she told the Jack-in-the-box.

"You wouldn't!" said Jack.

"I would too," said Angelina. "And I'm not going to come back until I get a new nose."

'You're silly, Angelina," said the Jack-in-the-box. "Your nose is cute and funny. It makes people laugh."

"That's just it," said Angelina. "I don't want to make people laugh."

"You don't want to make them cry, do you?" asked Jack. "I make people laugh by jumping up and down in my box, and I'm glad I can do it."

"It's different with you. You're a boy. and you're a Jack-in-the-box. I'm a doll and I'm a girl, and girls don't like red noses."

"What kind of a nose do you want. Angelina?" asked Jack.

"I want one the color of a shell. I've heard people talking about shell-like noses. They must be very pretty. Jack, do you know where I'd get a nose like a

"Yes," said Jack, "but you'd have to go a long way. Shells are in the sea."

"I'll go to the sea," said Angelina. "I'll start this very night."

The next morning when Angelina's little mistress went to take Angelina for a ride in the doll's carriage, she cried out in alarm, "Angelina Applebud is gone." She looked everywhere in the play room. She couldn't find the little doll. She looked at the Jack-in-the-box who sat near Angelina's cradle. "Jack," she said, "do you know where Angelina went?"

Jack didn't answer. He knew she had gone to the sea shore, as indeed she had. It was just at sun up Angelina had seen a little sea-horse out for a morning gallop. She had called out to him, and he had come in from riding the waves to see what she wanted. When he heard her story, he had said, "You come with me, Angelina. I'll take you down to Mattie Mackerel's Beauty Shop. If anyone can fix up your nose for you, Mattie can."

At the very minute that the little girl was talking to the Jack-in-the-box, the little doll was talking to Mattie Mackerel.

"So you want a nose like a shell? Well, I think I can fix you up. What kind of a shell would you like to have? A lobster shell perhaps?"

"I don't know," said Angelina, "What color is a lobster?"

"Blackish green," said Mattie.

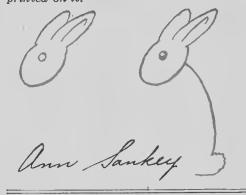
"Oh no," said Angelina," I want a pale pink nose,"

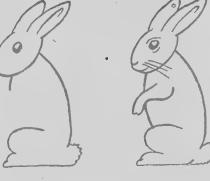
"Then I've the very thing," said Mattie, and she went to a closet and came back with a tiny pink shell. Angelina



Perhaps you won't go roaming around in the woods these chilly March days but as you walk down the road or work around the yard you may hear a clear, warbling whistle. Look for the musician; it may be an Evening Grosbeak, one of our most beautiful winter birds. Its plumage is a wonderful harmony of white, black, brown and dusty yellow, and the bird is about the size of a robin. The Evening Grosbeak is a wandering bird, seldom staying long in one district. Have you seen one?

Once again you begin to think about making a little gift for mother—this time an Easter gift. What will it be? With the easy steps shown, draw on cardboard a large bunny, then cut two bunnies of a slightly larger size from a piece of flannel or colored woollen cloth. Stitch the bunnies together one on each side of the cardboard bunny using an overcast stitch in bright colored yarn. Make a loop of twisted yarn and fasten to the bunny so that it may be hung up. There—a fine cushion for mother to hang on the wall to keep her pins and needles handy. A pretty card could be made on white drawing paper on which colored flowers from an old catalog or greeting card have been pasted and your special message for mother printed on it.





cried out in delight. Mattie went to work, and in no time at all, Angelina Applebud's nose no longer looked like an apple, but like a dainty pink shell.

The sea-horse took Angelina back to the sandy shore, and she went home. The Jack-in-the-box couldn't believe his

"Upon my frilly collar, Angelina, you're beautiful. You're the prettiest doll that ever went out in a doll carriage."

When people looked at Angelina after that they didn't laugh. They gasped at the very beauty of her. But they still called her Applebud.

A Miniature Silver Cup



ARE you short of a grand prize, or a novelty award for your party games or club tournaments?

You can make a miniature cup for a few cents that will be prized as a nov-

elty award by the winner and kept as a souvenir of the event for many years to

Simply solder an old collar button to a large size thimble as shown in the diagram. The handles of the trophy are made from small size paper clips that have been fashioned artistically and then soldered to the top of the thimble.

To make the prize still more effective you can have the thimble engraved either with the donor's name, the name of the event, or the date. The engraver will expect you to have the lettering done before you solder anything to the thimble, and he may undertake to set the whole thing up for you. Engraving may cost around five cents a letter so use your own judgment.

The home-made trophy is a thimble full of fun even when presented unadorned.—Walter King.

Introductions Are Important

SOMETIME, sooner or later, you will find it necessary to introduce one friend to another, or one of your school pals to other members of the family. These introductions are important and should be done in the best manner pos-

sible. A poor introduction handicaps those meeting for the first time, and if you are responsible it will reflect on your everyday knowledge of social procedure.

The two main points to remember are simplicity and friendliness. For a boygirl introduction mention the girl's name first. When introducing a friend to your mother simply say: "Mother, this is my friend, June Showers." If two boys are to be introduced it matters little whose name you mention first but you would show especial care if you started with the name of the oldest boy, or the one who was the visiting guest. The same applies to a girl to girl introduction.

Once the two have met, it is up to you to help break the ice by starting off a conversation. What is there for a newly-introduced person to say except such a meaningless thing as, "Oh, so you are Johnny, are you?" You might help out by saying, "Johnny is in my

room at school," or "This is the boy who won first prize at the fair for his fine painting?

The same rules apply when you are the one who is being introduced. Don't try to be fancy with your remarks. Just aim for a natural and warm friendliness. A simple, "How do you do?" is better than the stiff, "I'm pleased to meet you." If you have a pleasant smile it will be obvious that the introduction pleases you, won't it? And all introductions should please you. How can you tell but what you may be meeting someone who is going to turn out to be a very helpful acquaintance or a very dear friend?

After being introduced, talk with the person you have just met as though you were really interested. Your first concern should be to let your new friend see that you are really anxious to become better acquainted. That is the way to make friends quickly and friends are even more important than introductions. -Walter King.

My Own Book of Stories

No. 6 IN SERIES

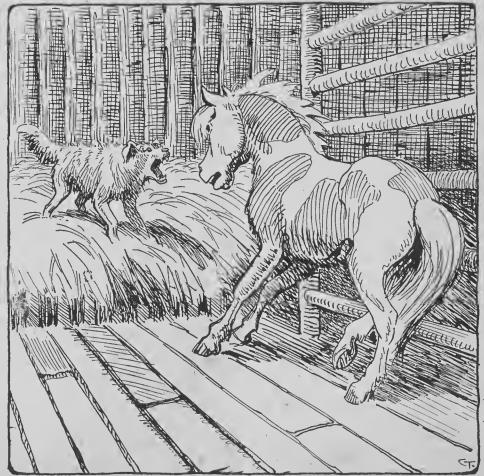
HERE'S a story about a dog that was very greedy and soon earned for itself a bad name which people use even today.

This dog went roaming about the country and wherever it went it quarreled with the other dogs, and snarled at the people so that no one would give it a home. One day this dog trotted into a stable and found a manger full of fresh hay. He was about to leave the hay and continue his wanderings when he heard a sound at the door and in walked a little pony who smelled the fresh hay and knowing that this hay was meant for his dinner began to eat it.

At once the greedy dog sprang at the little pony (as you see in the picture) and would not let him eat the hay, "Stay back or I'll nip your heel," he barked.

"What a greedy fellow you are to be sure," said the little pony, "this hay is not food for you yet you will not let anyone else eat it.'

Have you ever heard a person say "a dog in the manger"? Do you know what they meant?—A. T.



Picture of the dog in the manger to color for your scrapbook.

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THE COUNTRY GUIDE Winnipeg, Man.

From the items numbered 1 have selected the following in which 1 am interested in the literature, etc., offered.

Name P.O.

Please print plainiy.

Between Ourselves



This young cow moose was raised on a bottle from the time it was five days old. It is very tame, in fact regarded by some as a nuisance. The picture was taken on Church Avenue, Vanderhoof, B.C.

THE publication business is always developing new wrinkles. One of our esteemed Winnipeg dailies has fastened on one which appears to be profitable. This publication runs a quiz contest in which each person questioned before the "mike" has a silent partner who shares the prize money if the answer given is correct. The silent partners are chosen from among the advertisers in recent issues of the paper. The purpose, of course, is to boost the advertising in the classified section of the publication. And it seems to work. It even brings in people who have nothing to advertise, but who concoct a lot of nonsense for which they pay advertising rates, in the hope that the ad will qualify them as a silent partner. Incidentally, it makes the classified section one of the most amusing pages in the journal. Here are two samples:

FARMER, AGED 38, WISHES TO meet girl around 30 years of age who owns a tractor. Object matrimony. Please enclose snap of tractor.

VET. 23, LAZY, UNDEPENDABLE, irresponsible, and unpredictable. Considers time clocks, routine and regular hours an unnecessary evil. Starvation forces me to seek employment. Small salary desired if no exertion is called for. A larger salary expected if actual work is required.

WALTER CARTER, R.R. 2, Calgary, thinks that publishers' brains should be diverted to more important business. He would like to have the ads and the reading matter on separate pages. Says he: "A tired business man or farmer is sick of all the advertising matter he sees. In order to read an article he has to wade through page after page of advertising matter to get to the end of a story. This is too much effort after a day's work. Keep the ads separate from the reading matter and then you will have a magazine which is welcome in every home."

This is exactly the way this editor feels when some particularly entertaining radio program is interrupted to sell some patent medicine he doesn't need or some luxury he cannot afford. But it sobers us when we reflect that what the reader pays for his subscription, and what the listener pays for radio license, does not begin to cover the cost of the magazine or the radio program. The advertiser pays the shot, and unless Mr. Carter and the public generally are willing to pay much more for the magazine the advertiser will have his say.

SPEAKING of ads, a sincere and disturbed friend of long standing charges us with the worst crime in the editorial calendar—that of publishing ads as reading matter. Says he:

"Will you allow an old subscriber to protest the article, The Farmer and the Cost of Living, on page 11 of your February issue. A more grossly unfair, unsigned article is hard to conceive. If, as in my opinion, it is a paid advertisement it should have been signed by the advertiser as such, not put in with the semblance of an ordinary article to catch the unwary or ignorant."—Herbert A. C. Brown, Carnegie, Man.

No such luck. The article was conceived and produced by The Guide staff without the knowledge of, or remuneration from anyone outside. Had it occurred to us that we could have persuaded someone else to pay for it we would have been pleased to have the revenue in these times of rising costs. But we can assure Mr. Brown that in that case the word 'Advt.' would have appeared unfailingly in the lower right hand corner. The article was the pictorial presentation of the fact that urban Canadians buy certain commodities cheaper because the farmer is obliged to sell them for less than he would get in an unrestricted market. About the facts there can be no question. The inference which we intended to convey was that urban Canada has no right to expect a bonus from agriculture in times like these when urban profits are higher than they have ever been before. If Mr. Brown wishes to disagree we respect his judgment. As for ourselves we shall stand by our guns on this interpretation.

HORSE stories get fewer and farther between as mechanization proceeds in town and city. The Guide hadn't received one for a long time until we got the following from Jessie A. Steele, a fact story from her own locality. Here it is in her own words:

"For 12 long years the old black horse had made the rounds here in Highland Park, with Solomon Iken atop his junk

"Yesterday was no different from other days, except Iken was unusually quiet. There was no hawking, no cry of 'Rags, bottles, sacks, old papers'. Instead he dozed. Or so people thought until late afternoon a passerby, noting the pallor of the man, stopped the horse. Solomon Iken was dead.

"How long, no one knew. Receiving hospital attendants guessed he had died from a heart attack, several hours earlier in the afternoon.

"Certainly old Dobbin had not known, but had faithfully covered the customary route, slowly, as was his master's way, not to miss any possible customers; methodically making street corner turns in traffic as he had been trained to do through years with Iken. Avoiding street cars-wondering maybe why his master was so quiet. I like to think so."

Answers to Nature Quiz On page 63

		1	
No.	1—False.	No.	11—False.
No.	2—False.	No.	12—False.
No.	3—True.	No.	13—True.
No.	4—True.	No.	14—True.
No.	5—True.	No.	15—True.
No.	6—False.	No.	16—False.
No.	7—True.	No.	17—True.
No.	8-False.	No.	18—True.
No.	9—True.	No.	19—False.
No.	10—True.	No.	20—True.



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